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ABSTRACT

The Southern Africa Consortium for Monitoring Educational Quality (SACMEQ) is a consortium of ministries of education in southern Africa. This bound report--one of seven--presents the research results and policy suggestions that emerged from implementation of SACMEQ's initial educational policy research project. The report looks broadly at five areas of policy concern: (1) baseline data for selected inputs to primary schools; (2) how conditions of primary schooling compare with the Ministry of Education's benchmark standards; (3) whether educational inputs to primary schools have been allocated in an adequate fashion among and within education districts; (4) the level of reading achievement for Grade 6 students; and (5) which educational inputs to primary schools have had the strongest effect on the reading achievement of Grade 6 students. Data for the study were gathered from a student test of basic reading literacy and student, teacher, and principal questionnaires. This report specifically focuses on reading achievement in the nation of Malawi. Along with reading test scores, the report presents information on the characteristics of Grade 6 students and teachers; student access to materials; conditions of school rooms and buildings; and other information on the state of education in Malawi. (Contains 17 references and 31 tables.) (WFA)

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The quality of education: some policy suggestions based on a survey of schools

Malawi

by
Grace Milner
Joseph Chimombo
Thokozire Banda
Clive Mchikoma

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Malawi

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International Institute
for Educational Planning

SACMEQ Educational Policy Research Series: Report No. 7
Series Editor: Kenneth N. Ross

The quality of primary education: some policy suggestions based on a survey of schools

Malawi

An interim report

by

Grace Milner
Ministry of Education, Science and Technology

Joseph Chimombo
National Centre for Educational Research and Training (CERT)

Thokozire Banda and Clive Mchikoma
Ministry of Education, Science and Technology

International Institute for
Educational Planning,
UNESCO

Ministry of Education,
Science and Technology,
Lilongwe, Malawi

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Foreword

The Southern Africa Consortium for Monitoring Educational Quality (SACMEQ) is a consortium of Ministries of Education located in the Southern Africa sub-region. SACMEQ's main mission is to undertake integrated research and training activities that will: (a) expand opportunities for educational planners to gain the technical skills required to monitor, evaluate, and compare the general conditions of schooling and the quality of basic education; and (b) generate information that can be used by decision-makers to plan the quality of education.

In January 1997, the Government of Zimbabwe officially registered SACMEQ as an international non-governmental organization. SACMEQ's Sub-regional Co-ordinating Centre is located within UNESCO's Harare Office. The work of the Centre is managed by a Director and is guided by a Committee chaired by Zimbabwe's Minister of Education. Fifteen Ministries of Education are now members of SACMEQ: Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Tanzania (Zanzibar), Uganda, Zambia, and Zimbabwe. The IIEP became a member of SACMEQ during 1997 – in response to an invitation made by the SACMEQ Assembly of Ministers.

SACMEQ's programme of research and training has four features which have optimized its contributions to the field of educational planning in Africa: it provides research□based policy advice concerning issues that have been identified by key decision-makers, it functions as a co-operative venture based on a strong network of educational planners, it combines research and training components that are linked with institutional capacity building, and its future directions are defined by the participating Ministries.

SACMEQ's initial educational policy research project was assisted during 1994/1995 through a Funds-in-Trust (FIT) agreement between the Italian Government and UNESCO. In 1996 SACMEQ's sub-regional activities were financed under an FIT agreement with the Netherlands Government. This arrangement was renewed in 1997 and 2000 for the launch of SACMEQ's Sub-regional Co-ordinating Centre and to support SACMEQ's second educational policy research project. The Malawi Ministry of Education, Science and Technology would like to thank the United Kingdom's Department for International Development (DFID) and the United States Agency for International Development (USAID) for their financial assistance with SACMEQ research activities.

This report presents the research results and policy suggestions that emerged from the implementation of SACMEQ's initial educational policy research project. It is offered to other educational planners – not as a final evaluative comment, but rather as a stimulus for constructive discussion of educational policy options, and also as a successful model of productive collaboration among educational planners from many different countries.

Hon. Dr George Nga Mtafu
Minister of Education, Science and Technology
Lilongwe, Malawi

Gudmund Hernes
Director, IIEP
Paris, France

Special note on this Interim Report

During the implementation of SACMEQ's initial educational policy project in Malawi there were major data losses due to non-response. At the national level the coverage of schools was quite good – however, at the pupil level there were major problems due to absenteeism. Data were obtained from only around two-thirds of the pupils selected into the sample. At the regional level, data loss due to non-response was particularly high in the North, South East, and Shire Highlands Divisions, where only around one-half of the pupils responded.

These levels of data loss were far larger than had been set down as part of the quality-control standards for SACMEQ's initial project. In most other countries involved in the project, the response rate at the pupil level was 90 percent or more.

It was beyond the scope of this report to conduct detailed analyses of the degree of bias that may have occurred in the Malawian data due to high levels of non-response. Therefore, this report must be treated as an 'Interim Report' until further analyses of the data have been undertaken and reported by the Planning Division of the Malawi Ministry of Education.

Further information

For further information about SACMEQ and its policy research programme, please contact:

The Director
SACMEQ
UNESCO Regional Office
8 Kenilworth Road
Harare
Zimbabwe

Telephone: (263-4) 776 114-5, 776 775, 746 231, 786 598
Fax: (263-4) 776 055

For further information about the IIEP's programme of co-operation with SACMEQ, please contact:

Kenneth N. Ross
International Institute for Educational Planning
7-9 rue Eugène-Delacroix
75116 Paris
France

Telephone: (33-1) 45 03 77 19
Fax: (33-1) 40 72 83 66
E-mail: k.ross@iiep.unesco.org

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SACMEQ's initial educational policy research project was a co-operative cross-national initiative focused on shared policy concerns that were related to planning the quality of primary education in the Southern Africa sub-region. Each national educational policy report prepared for this project therefore represents a 'team effort' that has been made possible through the hard work of many people.

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Chapter 1

The setting for the study

Introduction

Malawi is situated in the southern part of the African continent, with a total land area of 119,140 square kilometres – of which 20 percent is covered by Lake Malawi. It is a landlocked country that is bordered by Zambia to the West, Tanzania to the North, and Mozambique to the East and South. Malawi became independent from colonial rule in 1964 and a Republic in 1966. At the 1998 national census, the country's total population was around 9.9 million with a population density of 104 people per square kilometre.

For administrative purposes, Malawi is divided into three regions (North, South, and Centre) which cover 26 districts. The official language of English is used for communication in business and commerce, and it is also used as the language of instruction in all levels of education except in Standards 1 to 4 of primary school. In those standards, the most dominant local language of the area in which the school is located is used as the medium of instruction. English is taught as a subject from Standards 1 to 4 – but it is used as a medium of instruction from Standard 5 onwards.

Historical background of basic education in Malawi

Before Malawi gained independence in 1964, missionaries ran most of the primary schools and some secondary schools. The missionaries' aim at that time was to teach the 3Rs (reading, writing, and arithmetic) as well as the Word of God. In the early 1970s, the government took over direct responsibility for nearly all primary education in the country. Local Education Authorities were created at this time. These were elected bodies within municipal councils whose main responsibility was to assist with the development of primary education and to provide bursaries and scholarships to needy students. The primary schools at that time were split into four main categories:

(a) community or junior schools that were assisted by government but run by local communities in remote areas;

(b) mission schools that were established and run by missionaries;

(c) Local Education Authority schools run by government through local structures; and

(d) private (or designated) schools run by private organizations and mostly used by expatriates.

In the 1970s, the government centralized its activities and hence it took over control of the Local Education Authority schools.

Education system in Malawi

The formal education system in Malawi comprises primary, secondary, and tertiary (including teacher training) education. All of these fall under the Ministry of Education, Sports and Culture. It is important to note that the Ministry has adopted its own administrative structure based on six division offices and 32 education districts. Two other ministries are also involved in education on a smaller scale. These are the Ministry of Gender and Community Services which is responsible for early childhood education and adult literacy, and the Ministry of Labour which is responsible for technical education and vocational education and training.

The education system in Malawi follows an 8-4-4 structure. That is, eight years of primary, four years of secondary, and four years of tertiary education. Primary education is divided into infant (Standards 1-2), junior (Standards 3-5), and senior (Standards 6-8) classes. At the end of the eight-year primary cycle, pupils take public examinations leading to a Primary School Leaving Certificate (PSLCE) which is a prerequisite for entry to secondary schooling. Secondary education is divided into two sections: junior secondary comprising Forms 1 and 2, and senior secondary comprising Forms 3 and 4. At the end of junior secondary, pupils take public examinations and successful candidates are awarded a Junior Certificate of Education (JCE). This certificate is a gateway to senior secondary school. In Form 4, pupils take the Malawi School Certificate Examination (MSCE) which is used for selection into higher education. Tertiary education ranges from two years to seven years depending on the programme.

a) Primary education

The goals of primary education in Malawi are:

(i) to develop quality basic education relevant to Malawian children individually, communally, and nationally;

(ii) to provide quality basic education over eight years for all school-age children;

(iii) to provide education that develops the knowledge, skills, and values of children, enabling them to participate in the social, economic, and political development of the country.

In 1997, there were 3,761 primary schools with a total enrolment of 2,906,350 pupils. When free primary education was introduced in 1994, pupil enrolment rose rapidly from 1.9 million to 3.2 million and in 1997 stabilized at 2.9 million (MOE and UNICEF, 1998). The sudden increase in enrolment led to an acute shortage of teachers in primary schools. About 18,000 temporary teachers and 2,000 retired teachers were recruited in order to have a teacher/pupil ratio of 1:60. Since the temporary teachers had to be equipped with some teaching skills, the Ministry of Education – with assistance from donors – developed an intensive teacher-training programme that involved three months of residential training at a teachers college, self-study distance education, and school-based supervision. This programme is known as the Malawi Integrated In-service Teacher Education Programme (MIITEP). The programme was designed to train as many teachers as possible within a period of four years.

The primary school enrolments of pupils and teachers for each division in 1997 have been presented in Table 1.1. It can be seen that the percentage of qualified teachers varies substantially from division to division. The approved teacher/pupil ratio is 1:60 but, in fact, the teacher/pupil ratio for qualified teachers was 1:119 for Malawi – which was almost twice the approved ratio. This situation is completely unsatisfactory given that a well-qualified teacher is an essential contributing factor to quality in education.

From Table 1.1, it can also be seen that the number of classrooms is too few for the total pupil enrolment. This condition forces many schools to conduct a number of their classes in the open air. In addition, schools practise an overlapping shift system in order to maximize the use of classrooms.

Table 1.1. Schools, classrooms, enrolment, and teacher statistics for primary education by Division

Division	**Schools**	**Classrooms**	**Enrolment**	**Total teachers**	**Qualified teachers** (%)	**Pupil/ Teacher ratio** (qualified)	**Pupil/ Teacher ratio** (all teachers)
North	747	3 509	410 871	7 434	63	1:87	1:55
Central East	872	2 939	508 545	8 102	45	1:138	1:63
Central West	770	4 302	722 826	12 390	45	1:130	1:58
South East	560	2 957	477 464	7 041	47	1:143	1:68
South West	417	2 330	396 606	6 403	60	1:103	1:62
Shire Highlands	395	2 559	389 638	6 000	54	1:121	1:65
Malawi	**3 761**	**18 596**	**2 905 950**	**47 370**	**51**	**1:119**	**1:61**

Source: Ministry of Education, EMIS Division, 1997.

b) Secondary education

Secondary education is administered by the government, missionaries, and private owners. Secondary schools are divided into six categories:

(i) Government day and boarding schools funded by the government through fees.

(ii) Grant-aided schools operated by church organizations but receiving government grants for day-to-day running costs. Fees in these schools are slightly higher than in government schools.

(iii) Private schools operated privately and receiving no grant from the government.

(iv) Designated schools, mostly for expatriates, receiving nominal government grants.

(v) Community day secondary schools (CDSS). These were formerly known as distance education centres and were converted into CDSSs in 1997. The aim of the centres is to serve the local catchment area. These schools are mostly initiated and funded by the communities.

(vi) Distance education courses for students at home that are mainly taken by employees who wish to improve their qualifications or by young people who fail to enter other secondary institutions.

In 1997, there were 624 secondary education institutions in Malawi. Pupil enrolment in all government and grant-aided secondary schools was 175,487.

c) Tertiary education

Tertiary education in Malawi embraces primary and secondary teacher training, technical education, university education, and other post-secondary professional courses.

(i) *Teacher-training colleges.* There are several teacher training colleges for primary school teachers. They are spread across the administrative regions of Malawi. Pre-service training for teachers normally takes two years in these colleges.

(ii) *Technical colleges.* The government institutions are under the Ministry of Labour but the teaching staff are provided by the Ministry of Education. There are also private institutions that undertake their own recruitment of teachers and students.

(iii) *University of Malawi.* This institution has five constituent colleges namely: Chancellor College with many faculties, Bunda College specializing in agricultural science, the Malawi Polytechnic specializing in engineering and in business studies, Kamuzu College for studies of nursing, and the College of Medicine that produces medical doctors.

(iv) *Mzuzu University.* This university is situated in the northern part of Malawi. It offers training in different areas of education.

d) Support institutions

The Ministry of Education has five types of support institutions: these are:

(i) The Malawi Institute of Education (MIE), which has responsibility for the development and evaluation of the primary and secondary school curriculum and instructional materials, as well as for in-service teacher training.

(ii) The Malawi National Examinations Board (MANEB), which has responsibility for all school and primary teacher training examinations. The Board develops examination syllabuses for all subjects. Through its Research and Testing Department it undertakes the development of testing programmes, the evaluation and testing of job applicants, and provides research services in education and educational measurement.

(iii) The Malawi College of Distance Education (MCDE) has responsibility for enrolling secondary students who apply to study through correspondence.

(iv) The Centre for Educational Research and Training (CERT) is a unit attached to the University of Malawi that was established to undertake educational research studies.

(v) The Malawi National Commission for UNESCO is a national organization that links government ministries in the fields of education, science, culture, and communication. The Commission provides some training for education personnel in various fields of management. It also helps to solicit funding and to involve the

Ministry in UNESCO programmes that have a bearing on the development of education in Malawi.

(vi) The Malawi National Library has responsibility for promoting, establishing, equipping, and managing national libraries.

e) Finance of education

The education sector receives its funding from the education budget, donors, and parental support in the form of labour needed for classroom construction and maintenance, and through the payment of fees at secondary school level. The role of donors in education finance is the most important element and it has enabled the Ministry to provide some help, through the development budget, towards the maintenance of buildings and the provision of teaching and learning materials and teacher education.

The share of total government expenditure allocated to the education sector has increased over the years. In 1993/94, the percentage share was 19 percent, an increase of 3 percent over the previous year. Since then, it has increased, and in 1996/97 it stood at 23 percent. This is high in comparison with other government sectors. Within the education sector's recurrent budget there has been a shift of resources towards primary education, and between 1993 and 1997 the primary-education share rose from 49 percent to 62 percent.

The ratios of primary education unit costs to other levels of education have been presented for the years 1993/94 to 1996/97 in *Table 1.2.* (MOE, 1995). The unit cost at primary level is by far the lowest for all levels of education. For example, the university student unit cost has persistently remained at over 180 times the primary pupil unit cost. Total expenditure on primary education has increased faster than total enrolment in nominal terms, but has not kept pace in real terms. Primary enrolment over the period increased by 61 percent, while real expenditure increased by 31 percent. On average the government spends about 6 percent on goods and services at the primary level, compared with about 40 percent at teacher-training colleges, 35 percent at technical and vocational colleges, and about 26 percent at the secondary-education level. It is important to note that, on average, about 84 percent of the primary education allocation is spent on teachers' salaries.

Table 1.2. Ratio of primary unit costs to other sub-sector levels

Level	Ratios			
	1993/1994	1994/1995	1995/1996	1996/1997
Secondary	11.4	10.0	11.8	11.6
Teacher training	36.4	38.4	51.8	56.9
University	190.5	180.0	233.8	186.2

Source: MOF: Approved Estimates of Expenditure.

The SACMEQ Policy Research Project

In 1994, the Ministry became aware of the existence of a major educational policy research project that had commenced in the Southern Africa sub-region. The project was in the process of being transformed from a joint activity undertaken by the International Institute for Educational Planning (IIEP) and the Zimbabwean Ministry of Education and Culture, to a sub-regional initiative. The first meeting of the Southern Africa Consortium for Monitoring Educational Quality (SACMEQ) was held in September 1994, and Malawi was able to send a representative to participate in plans for SACMEQ's initial project.

The target class for SACMEQ was Standard 6 which, for most member countries of the Consortium, was either the last or penultimate class of primary schooling. Although the last grade of primary school is Standard 8 in Malawi, it was nevertheless deemed that Standard 6 would be appropriate because, by that time, children should have acquired the basic skills of reading literacy. The Ministry of Education considered reading to be the key subject in primary school in that it was an essential prerequisite for mastery of other subject matter within the curriculum.

The aims of the SACMEQ project included a focus on the collection of baseline data that would provide an assessment of the conditions of schooling, and also several proposals to employ data analyses designed to determine the relative effects of educational input variables on achievement. All of these issues, as mentioned earlier, were of major concern to the Ministry of Education.

The five main policy-related questions for SACMEQ's initial project

SACMEQ's initial educational policy research project commenced with a dialogue between the SACMEQ National Research Co-ordinators (NRCs) and key decision-makers within ministries of education in eight countries of the Southern Africa sub-region. This dialogue provided lists of 'high priority' educational policy concerns that were subsequently reviewed by the SACMEQ NRCs in a search for common themes. The review yielded five general areas of concern, which were used to generate the following policy-related questions.

(i) What are the baseline data for selected inputs to primary schools?

(ii) How do the conditions of primary schooling compare with the Ministry's own benchmark standards?

(iii) Have educational inputs to primary schools been allocated in an equitable fashion among and within educational districts?

(iv) What is the level of reading achievement for Grade 6 pupils?

(v) Which educational inputs to primary schools have most impact upon the reading achievement of Grade 6 pupils?

These policy questions were central to the major concerns about the quality of education in Malawi. In addition, the co-operative nature of the SACMEQ project allowed Malawians to learn a great deal about the ways in which neighbouring countries used research to tackle important areas of educational policy. The project has also contributed to capacity building within the Planning Department in the Ministry and also the Research and Testing Unit at the University – especially with respect to the technical skills of sampling, instrument design, data collection, data entry, data cleaning, data analysis, and report writing. All of these skills are required by educational planners in ministries of education if they are to conduct high-quality, large-scale, educational policy research surveys. It was recognized that the acquisition of these skills was necessary if Malawi's Ministry was to be able to undertake a continuing programme of research that would monitor and evaluate the growth and performance of the primary education system.

Chapter 2

The conduct of the study

Introduction

This chapter describes the way in which the SACMEQ study was conducted in Malawi and other countries. First, it describes the importance of the study. Second, it outlines the work undertaken by participating countries before the implementation of the study. Third, it describes the instrument development, the sampling procedures, the data collection, data entry, and data-cleaning exercises.

The study was designed to establish an agenda for action by the government that was focused on issues related to: baseline indicators for educational inputs and reading literacy levels, equity in resource allocation, and linkages between educational inputs and reading literacy outcomes. The study was conducted as a collaborative effort by the International Institute for Educational Planning (IIEP) in Paris, and eight ministries of education that formed the initial membership of the Southern Africa Consortium for Monitoring Educational Quality (SACMEQ). By the end of 1999, SACMEQ's membership had expanded to 15 Ministries: Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Tanzania (Zanzibar), Uganda, Zambia, and Zimbabwe.

Co-operation with SACMEQ

In 1991 and 1992, the IIEP and the Ministry of Education and Culture in Zimbabwe conducted a research study on *Indicators of the Quality of Education.* The research reports that emerged from this study (for example, Ross and Postlethwaite (1992) and Murimba et al. (1994)) became widely respected in many countries of the Southern Africa sub-region. This occurred because of the direct impact of the reports upon educational policy in Zimbabwe. The study served as a model which could be emulated in other countries of the region and resulted in a series of workshops for educational planners from the Southern African sub-region. In 1992, an IIEP workshop on 'Data Building and Data Management' was organized in Harare. Its aim was to provide around 50 educational planners from eight countries in Southern Africa with the technical skills and research materials required to undertake a national study of primary schools. In addition, 'hands-on' training on all aspects of computer-based data processing was provided at a more advanced IIEP workshop on 'Data Processing for Policy Report Preparation', which was held in Harare in September 1993.

The educational planners, including a participant from Malawi, who attended the 1993 seminar subsequently prepared a proposal (Moyo et al., 1993) to launch a co-operative sub-regional project aimed at monitoring progress towards the achievement of the educational quality goals defined by the 1990 Jomtien Conference on Education for All. This proposal was developed into a major research plan at two meetings, in Paris (July, 1994) and Harare (September, 1994). It was on the basis of this plan that SACMEQ was launched in February 1995 by the National Research Co-ordinators (NRCs) from the Ministries of Education of Kenya, Malawi, Mauritius, Namibia, Tanzania (Zanzibar), Zambia, and Zimbabwe.

Instrument development

The data collection instruments developed by the SACMEQ NRCs were: a pupil test of reading literacy, a pupil questionnaire, a teacher questionnaire, and a school head questionnaire.

For SACMEQ's initial project, reading literacy was defined as "*the ability to understand and use those written language forms required by society and/or valued by the individual.*"

Such a definition was found to be general enough to accommodate the diversity of traditions and languages represented in the participating SACMEQ countries, and yet still be specific enough to provide guidance for test construction. The domains or types of reading literacy materials included in the pupil reading test were concentrated along three dimensions:

(a) *Narrative prose*: continuous texts where the writer aimed to tell a story – whether fact or fiction;

(b) *Expository prose*: continuous text in which the writer aimed to describe, explain, or otherwise convey factual information or opinion to the reader;

(c) *Documents*: structured information organized in such ways that pupils had to search, locate, and process selected facts, rather than read every word of a continuous text.

Seven reading skills were defined after an exhaustive discussion of the most important skills mentioned in the Standard 6 reading syllabus for each country. A test blueprint for these seven reading skills and the three domains of reading literacy has been presented in *Table 2.1*. There were 21 cells in the table and, in order to ensure that the test provided a balanced coverage of the required reading skills and the main reading domains, the number of items allocated for each cell was in approximate proportion to the emphasis given to it across the syllabi. This was a challenging task because it was necessary to restrict the total number of items in the test to around 60 so as to avoid problems of pupil fatigue. In fact, following extensive trial-testing and further analyses of data from the main data collection, a final test of 59 items was prepared.

Across the syllabi around one-third of the emphasis was narrative and therefore 21 of the 59 items were allocated for this domain. Within 'Narrative', around one-half of the emphasis in the syllabi was on 'Verbatim recall' of information. Therefore 10 out of the 21 items that had been allocated to 'Narrative' were designated for the cell representing 'Narrative and Verbatim recall'.

A deliberate decision was made that 'rotated tests' were to be avoided. This decision was taken because previous research carried out by the International Association for the Evaluation of Educational Achievement (IEA) indicated that some countries experienced difficulties in fieldwork when employing rotated tests. Further, since this study was concerned with reading literacy and not with school subjects with many sub-skill areas (for example, mathematics or science), it was felt that a test composed of 59 items provided sufficient information to cover the general construct of reading literacy.

Table 2.1. 'Skills by domain' blueprint for the pupil reading test

Reading skills	Reading domain			Total items
	Narrative	Expository	Documents	
Verbatim recall	10	14	0	24
Paraphrase concept	6	4	0	10
Find main idea	1	1	0	2
Infer from text	4	2	0	6
Locate information	0	0	9	9
Locate and process	0	0	6	6
Apply rules	0	2	0	2
Total items	**21**	**23**	**15**	**59**

Following the construction of the test blueprint, the reading passages and their accompanying test questions were prepared and subjected to extensive expert review. The passages were selected from items submitted by the SACMEQ countries. All items were in multiple-choice format, with four answer options per item. The possibility of including open-ended questions was considered and rejected because of financial constraints within countries for the training of scorers and for conducting the scoring.

In each participating country, a judgement sample of at least 5 schools and 20 pupils per school was used for the trial testing. A classical item analysis was undertaken on each country's data as well as on the pooled data set from all countries. Where the point biserial correlation between the 'right' answer and the total score was less than 0.20, then the reading-passage item, or answer options were improved or, if this was not possible, the item was dropped from the final test. Furthermore, if the point biserial correlation between a wrong answer and the total score was positive, then either the option was re-worded or the item was dropped. The reliability (KR20) of the final form of the test used in the main data collection in Malawi was 0.73.

Sampling

The sample designs applied in SACMEQ's initial project were selected so as to meet the standards set down by the International Association for the Evaluation of Educational Achievement (Ross, 1991). These standards require sample estimates of important pupil population parameters to: (a) be adjusted by weighting procedures designed to remove the potential for bias that may arise from different probabilities of selection, and (b) have sampling errors that are of the same magnitude or smaller than a simple random sample of 400 pupils (thereby providing 95 percent confidence limits for sample estimates of population percentages of plus or minus 5 percentage points, and 95 percent confidence limits for sample estimates of population means of plus or minus one-tenth of a pupil standard deviation unit).

Table 2.2. The numbers of schools and pupils in the Desired, Excluded, and Defined populations for Malawi

Division	Desired		Excluded		Defined	
	Schools	Pupils	Schools	Pupils	Schools	Pupils
North	745	34 082	168	1 075	577	33 007
Central East	743	30 999	237	799	506	30 200
Central West	888	40 986	335	918	553	40 068
South East	743	26 058	181	530	378	25 528
South West	559	28 504	143	309	272	28 195
Shire Highlands	394	22 969	87	208	307	22 761
Malawi	**3 744**	**183 598**	**1 151**	**3 839**	**2 593**	**179 759**

Table 2.3. The planned and achieved samples of schools and pupils

Division	Schools		Pupils	
	Planned	Achieved	Planned	Achieved
North	25	24	500	265
Central East	25	25	500	310
Central West	30	30	600	449
South East	25	21	500	252
South West	25	24	500	440
Shire Highlands	25	24	500	267
Malawi	**155**	**148**	**3 100**	**1 983**

The desired target population for Malawi was all pupils at the Standard 6 level in 1998 at the tenth month of the school year who were attending registered government or non-government schools in the country. The numbers of pupils in the desired, excluded, and defined populations have been presented in Table 2.2.

All schools that had a Grade 6 enrolment of fewer than 20 pupils were excluded. Table 2.2 indicates that Central West had the highest number of excluded schools (335), however this resulted in the exclusion of only 918 Standard 6 pupils from this region. Shire Highlands had the lowest number of excluded schools (87) and this resulted in the exclusion of only 208 Standard 6 pupils from this division.

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For Malawi overall, there were 1,151 excluded schools which amounted to only 3,839 Standard 6 pupils. That is, the number of excluded Standard 6 pupils amounted to only 2.1 percent of the pupils in the desired target population.

From the defined target population, a probability sample of schools (with probability proportional to the total enrolment in Grade 6 in each school) was drawn. Twenty-five schools were sampled from five Divisions, while 30 schools were sampled from Central West Division. This resulted in a planned national sample of 155 schools and 3,100 pupils (see Table 2.3). The sample design was designed to provide an 'equivalent sample size' (Ross and Wilson, 1994) of 400 pupils, based on an estimated intra-class correlation (rho) for pupil reading test scores of around 0.35.

Within selected schools, a simple random sample of 20 Standard 6 pupils was drawn. The figure of 20 pupils was chosen because, from practical experience, it was known that increasing the number of pupils within schools above this figure would increase the accuracy of sampling by a negligible amount, but might also increase the cost of the data collection considerably. There were also concerns among the SACMEQ NRCs that conditions in many schools would not permit a valid administration of the reading test if more than 20 pupils per school were involved.

At the first stage of sampling, schools were selected with probability proportional to the number of pupils who were members of the defined target population. To achieve this selection a 'random start-constant interval' procedure was applied (Ross, 1987). In several strata there were some schools with numbers of pupils in the defined target population that exceeded the size of the 'constant interval', and therefore each of these schools was randomly broken into smaller 'pseudo schools' before the commencement of the sampling.

At the second stage of sampling a simple random sample of 20 pupils was selected within each selected school. Sampling weights were used to adjust for the disproportionate allocation of the sample across regions and also to account for the loss of student data due to absenteeism on the day of the data collection.

A cautionary note

In *Table 2.3,* it may be seen that only seven schools withdrew completely from the data collection. However, a major problem occurred with data loss at the pupil level, where only 1,983 valid pupil responses were obtained from the planned sample of 3,100 pupils. That is, around a third of the pupil data were missing.

The reasons for this extremely high level of pupil non-response were varied. However, two of the major problems were the lack of transport for data collectors, and pupil absenteeism on the day of testing. The data loss was particularly severe in the North, South East, and Shire Highlands Divisions – where around 50 percent of the pupil data were missing.

These levels of data loss were far larger than had been set down as part of the quality-control standards for SACMEQ's initial project. To illustrate, the response rate for pupils for the first four countries to finish the project was 90 percent or more.

It was beyond the scope of this current report to conduct a detailed analysis of the degree of bias that may have occurred in the Malawi data due to these high levels of non-response. Therefore this report must be treated as an 'Interim Report' until further analyses of the data have been completed by the Planning Division of the Malawi Ministry of Education.

Calculation of sampling errors

When data are collected using multi-stage sample designs from sources at different levels of data aggregation (pupil, teacher, school) a great deal of care needs to be taken in interpreting the stability of sample estimates of population characteristics. In this report, all data analyses were undertaken at the between-pupil level. That is, all data collected from teachers and school heads were disaggregated across the pupil data file before analyses were undertaken.

The interaction of sample design and level of data analysis required that extra caution be used in interpreting estimates obtained by using information from teachers or school heads. The sampling errors of estimates derived from these two 'disaggregated' sources were much larger than the figures that were reported when using standard statistical software packages.

In the following chapters of this report, the standard errors of sampling have been provided for all important variables. The calculation of these errors acknowledged that the sample was not a simple random sample – but rather a complex two-stage cluster sample that included weighting adjustments to compensate for variations in selection probabilities. The errors were calculated by using the IIEPJACK software (Ross and Leite, in preparation). This software employs the Jackknife technique in order to calculate sampling errors and design effects.

The sampling errors have been labelled 'SE' in the tables presented throughout this report. For example, consider the percentages and means that have been reported in Table 2.4.

(a) For Malawi overall, the *sample percentage* of pupils who reached the minimum level of mastery on the reading test was 21.6 percent and the sampling error (SE) was 1.60 percent (see *Table 2.4*). These figures indicated that one could be 95 percent confident that the *population percentage* of pupils who reached the minimum level of mastery was within the following limits: 21.6 ± 2 (1.60) percent. That is, between a high limit of 24.8 percent and a low of 18.4 percent.

(b) For Malawi overall, the *sample mean* for pupils on the 59 item test was 20.7 and the sampling error (SE) was 0.31 (see *Table 2.4*). These figures indicated that one could be 95 percent confident that the *population mean* for pupils on the 59 item test was within the limits: 20.7 ± 2 (0.31). That is, between a high limit of 21.3 and a low of 20.1.

As mentioned above, by using the IIEPJACK software, it was possible to establish the sampling errors for all variables presented in this report. It is extremely interesting to examine the values of the 'design effect' (Kish, 1965) and the 'effective sample size' (Ross, 1987) for a selection of these variables across the different levels of data collection. The design effect is an indicator of the increase in sampling error that occurs for a complex sample in comparison with a simple random sample of the same size. The effective sample size offers an alternative approach to describing the impact of the complexity of the sample design and the data level on the precision of sample estimates.

To illustrate, consider the design effect and effective sample size values for the variable describing minimum mastery level in *Table 2.4*. The design effect value of 2.98 indicated that the variance of the sample estimate of the mean on this variable was 2.98 times larger than would be expected for a simple random sample of the same size. The effective sample size value of 665 showed that the complex sample of 1,983 pupils had a sampling error for this variable which was the same as would be obtained by employing a simple random sample of 665 pupils.

Now consider the values of the effective sample size for data collected at the teacher and school-head level. These data were disaggregated across the 1,983 pupils – but notice that the effective sample size for these variables was much smaller. For example, the effective sample size for 'Teacher academic education' was 124 pupils, and the effective sample size for 'Pupil-toilet ratio' was 141 pupils. The main point made here is that the sampling errors for information gained from teachers and school heads were much larger than would occur by using the total number of pupils as the sample size in sampling error calculations.

In *Table 2.5*, the information concerning sampling errors, design effects, and actual effective sample sizes, has been presented, as an illustration, for one division: North Division. Notice that, again, the source of data (pupil, teacher, or school heads) had a dramatic impact upon the values of the design effects and the effective sample sizes. The 'not applicable' designation (N/A) in the final column of Table 2.5 occurred because it is not possible to obtain a reasonable estimate of sampling error when the sample estimates for percentages are either 0 percent or 100 percent.

Data collection

Nine officers from the Centre for Educational Research and Training (CERT) and Ministry of Education conducted the data collection. The data-collection exercise was scheduled to last two weeks. Before going to the field, letters were written to all District Education Officers in order to make them aware of the data collectors' visits to the schools within their districts. Data collectors and supervisors were trained for one day before going to the field. Two further days were dedicated to a trial-testing programme in the Zomba district. Following the trial-testing in Zomba, the team met to discuss the experiences and problems that had been encountered. After clarifying everything, all data collectors left for the field. During the main testing a problem of transport occurred. Only two vehicles were made available. This required splitting the team into two data-collection groups – which prolonged the period of data collection. Data collection began in mid-September and ended in mid-October.

Some schools could not be reached because of poor roads and bridges. This resulted in a considerable shortfall in the sample. A second attempt was made two months later (in December 1998) to collect the data from the missing schools.

Table 2.4. Malawi overall: Sampling errors (SE), design effects, and actual/effective sample sizes for selected variables at the pupil, teacher, and school-head levels

Variable	Mean	%	SE	Design effect	Sample size	
					Actual	Effective
At pupil level						
Minimum mastery level	20.7	21.6	1.60	2.98	1 983	665
Desirable mastery level	16.0	0.6	0.30	2.70	1 983	734
Score on total test			0.31	4.61	1 983	430
Score on essential items			0.24	4.25	1 983	466
Average				**3.63**	**1 983**	**574**
At teacher level						
Teacher academic education	12.0	13.5	0.10	14.13	1 754	124
Total classroom resources	5.6	32.1	0.23	13.07	1 754	134
Available classroom library			3.04	13.85	1 754	127
Sex of teacher			4.06	13.14	1 734	132
Average				**13.54**	**1 754**	**129**
At school-head level						
Pupil-toilet ratio	117.8	20.2	11.06	13.89	1 964	141
Total school resources	4.8	8.2	0.18	13.19	1 991	151
Available school staffroom			3.33	13.75	1 991	145
Sex of school head			2.27	13.59	1 977	145
Average				**13.60**	**1 981**	**146**

Table 2.5. North Division stratum: Sampling errors (SE), design effects, and actual/effective sample sizes for selected variables at the pupil, teacher, and school-head levels

Variable	Mean	%	SE	Design effect	Sample size	
					Actual	Effective
At pupil level						
Minimum mastery level	18.2	8.5	2.64	2.37	265	112
Desirable mastery level	14.1	0.0	0.00	N/A	265	N/A
Score on total test			0.57	3.25	265	81
Score on essential items			0.42	2.68	265	99
Average				**2.77**	**265**	**97**
At teacher level						
Teacher academic education	11.7	9.1	0.38	11.44	250	22
Total classroom resources	5.9	35.5	0.54	11.43	250	22
Available classroom library			6.30	11.98	250	21
Sex of teacher			10.30	11.59	250	22
Average				**11.61**	**250**	**22**
At school-head level						
Pupil-toilet ratio	86.1	8.7	31.7	11.61	255	22
Total school resources	4.8	0.0	0.33	11.61	255	22
Available school staffroom			6.01	11.61	255	22
Sex of school head			0.00	N/A	241	N/A
Average				**11.61**	**252**	**22**

Data entry and cleaning

In February 1999, the IIEP arranged a training workshop in Malawi for the data-entry team and members of the SACMEQ team. Data entry then commenced and the whole exercise took three weeks. This activity was followed by six days of data cleaning which removed 'wild codes' and any major inconsistencies in the data.

Conclusion

This chapter has described how the SACMEQ survey was conducted in terms of instrument development, methodology, sampling, data collection, data entry, and data cleaning.

The following chapters focus on the educational policy implications of the results arising from the data analyses. They address each of the main policy questions described in the first chapter. *Chapter 3* presents the results from the analysis of baseline data for selected inputs to primary schools. *Chapter 4* examines the results of how the schooling conditions in Malawi compare with the Ministry's own benchmarks. *Chapter 5* analyzes the extent to which educational inputs to schools have been allocated in an equitable fashion among and within Divisions. *Chapter 6* presents the reading test results. Finally, *Chapter 7* presents an 'Agenda for Action' which summarizes the policy suggestions, classifies them in terms of low to high cost, and indicates whether they involve short- or long-term action.

Chapter 3

What are the baseline data for selected educational inputs to primary schools in Malawi?

Introduction

This chapter presents some examples of baseline data for selected educational inputs to Malawi's primary schools in order to establish a descriptive account of the pupils, their teachers, and their schools. The data are important for two reasons. The first is that they provide a 'context' for the analyses described later in this report. The second is that, over time, the levels and distributions may well change, and this survey can act as a point of reference in future should Malawi conduct repeat surveys. Repeat surveys provide educational planners with a sound means of mapping the general evolution of the education system and also offer tools for the identification of existing and emerging problems. Indeed, it is suggested that Malawi should consider conducting repeat surveys in future in order to study trends over time.

Policy Suggestion 3.1: The Ministry should plan to undertake a follow-up survey of the same target population employed during SACMEQ's initial project in order to examine changes in important educational indicators over time.

A note on the interpretation of the data analyses

Before presenting the results, two points should be stressed. The first is that the variables presented in this chapter represent a small subset of the larger number of variables for which data were collected.

The second point is that it is very important to interpret each statistic in association with its sampling error. It will be recalled from *Chapter 2* that the sample was drawn in order to yield standard errors of sampling for pupils in Standard 6 in Malawi, such that a sample estimate of a population percentage would have a standard error of ±2.5 percent. For this level of sampling accuracy we can be sure 19 times out of 20 that the population value of a percentage lies within ±5 percent of the estimate derived from the sample. The sampling errors for means are also given in the tables and the same principle applies for limits of two standard errors of sampling.

Where a percentage or a mean is presented for a sub-group of pupils (such as for divisions) then the standard error will be greater than for the sample as a whole. This occurs, in part, because the sample sizes for sub-groups are smaller than the total sample size. Had smaller standard errors for sub-groups been required, this would have increased the size of the total sample and also of the budget required to undertake a much larger field data collection.

To illustrate, consider the first column of entries in *Table 3.1*. The average age of pupils in months at the time of data collection has been presented separately for each division and for Malawi overall. The standard error (SE) of each average has also been presented. For the first division, North, the average student age was 176.0 months at the time of the data collection, and the standard error for this estimate was 2.16 months. That is, there were 19 chances in 20 that the average age of the population of Standard 6 pupils in the North region

was 176.0 ± 2(2.16). In other words it can be said that we can be 95 percent confident that the population value for North was between 171.7 months and 180.3 months.

It is important to note that the value of the standard error for each estimate changed from division to division. This variation was caused by two main factors: differences in the distribution of pupils among schools within divisions and the structure of the sample design within each division. The smallest standard error of 1.01 months occurred for the sample estimate of average age for the whole population of Standard 6 pupils in Malawi. This result was to be expected because the overall sample estimate was based on a much larger sample of schools and pupils than the corresponding estimate for any single division.

In interpreting the values in *Table 3.1* and other tables throughout this report, it is important to remember that the percentages and means have been presented in terms of pupils. That is, pupils were the units of analysis – even though some variables in this report referred to teachers or schools. Where a percentage for a variable that describes teachers has been presented, this percentage should be interpreted as 'the stated percentage of pupils that were in schools with teachers having the particular characteristic'. Similarly, a percentage for a variable that describes schools should be interpreted as 'the stated percentage of pupils that were in schools with the particular characteristic'.

Specific policy questions related to educational inputs

As a starting point, in order to guide the data analyses, the very broad educational policy question posed in the title to this chapter was divided into six specific questions. These six questions were used to develop a more structured response to the educational policy issues surrounding the main question.

(a) What were characteristics of Standard 6 pupils?

(b) What were the characteristics of Standard 6 teachers?

(c) What were the teaching conditions in primary schools?

(d) What aspects of the teaching function designed to improve the quality of education were in place?

(e) What was the general condition of school buildings?

(f) What level of access did pupils have to books?

What were the characteristics of Standard 6 pupils?

A wide range of information about pupil characteristics has been presented in *Tables 3.1* and *3.2*. Information has been listed concerning the age of Standard 6 pupils in months, the sex of these pupils, the number of books they had in their homes, the wealth of their homes (as measured by an Index of Possessions), the regularity of eating meals (as measured by an Index of Regular Meals), the educational level of their parents, the use of the English language in their homes, the number of days that pupils were absent in the month before data collection, the percentage of pupils who were taking extra lessons, the extent to which the pupils were given homework, and, finally, the amount of grade repetition. The information in *Table 3.1* covers those background characteristics that were 'home related', and the information in *Table 3.2* presents 'school-related' information.

a) Age of Standard 6 pupils

The official entry age to Malawi schools is 6 years. In fact, pupils are expected to enrol in school between the ages of 6 and 7 years. This means that pupils who start Standard 1 at the official entry age of 6 or 7 years, should be 11 or 12 years (132 or 144 months) when in Standard 6. However, the results from *Table 3.1* indicated that many pupils in Standard 6 were over-age. The national average was 181.1 months which was around 3 years older than the expected maximum official age. The Central East and Central West Divisions had the oldest Standard 6 pupils (means of 186.2 and 184.2, respectively). The possible reasons for having over-age pupils in Standard 6 are:

(i) most pupils, especially in the rural areas, often register in Standard 1 when they have passed the age of seven years, and this is mainly due to long distances between homes and the school;

(ii) high repetition rates, especially in the lower standards;

(iii) an influx of drop-outs rejoining the system (probably even in their teens) after the introduction of Free Primary Education (FPE) in 1994.

Pupils in Standard 6 were aged between 9 and 24 years, a range of 15 years. This issue needs to be examined seriously by the Ministry because the age gap would appear to be too wide for satisfactory learning to occur. Perhaps it would be much better for the older students to be considered for adult literacy classes.

Policy Suggestion 3.2: A review of current practices related to maximum entry age, repetition rates, and promotion rates should be carried out with a view to bringing forward policies that will decrease the age range in a standard and hence provide a more manageable educational environment in schools.

b) Gender distribution

The results presented in the second set of figures in *Table 3.1* suggest that there is some gender inequity with respect to participation rates in Malawian schools. In Standard 6 girls constituted only 46.5 percent of all pupils. In Shire Highlands the figure was only 41.8 percent. The standard errors for both of these figures indicated that there was a significant deviation from the desired figure of 50 percent.

Policy Suggestion 3.3 (a): The Ministry should work with Parent Associations and Teachers Unions to design a social campaign which (on a continuing basis) should aim to sensitize parents to the importance of sending children (especially girls) to school.

Policy Suggestion 3.3 (b): The social campaign for school attendance (see *Policy Suggestion 3.3 (a)*) should be supported by a major community-based training initiative with an appropriate budget that covers at least five years.

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Table 3.1. The means and sampling errors for selected pupil background characteristics (home related)

Division	Age (months)		Sex (female)		Books at home (number)		Possessions at home (index)		Meals (index)		Parent education (index)	
	Mean	SE	%	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
North	176.0	2.16	47.3	3.00	7.7	1.66	3.6	0.18	11.2	0.11	6.1	0.26
Central East	186.2	1.67	46.6	3.13	14.6	3.24	4.2	0.19	11.1	0.13	5.5	0.21
Central West	184.2	2.13	48.2	2.27	13.4	2.78	4.5	0.30	11.1	0.10	5.9	0.31
South East	182.0	2.48	46.8	3.59	9.9	2.67	5.0	0.37	11.2	0.13	5.8	0.38
South West	174.4	3.10	45.5	3.69	17.6	2.39	5.3	0.37	11.4	0.09	7.0	0.41
Shire Highlands	183.5	1.96	41.8	2.92	10.0	2.89	4.1	0.17	10.6	0.21	5.7	0.21
Malawi	**181.1**	**1.01**	**46.5**	**1.27**	**12.6**	**1.13**	**4.5**	**0.13**	**11.2**	**0.05**	**6.0**	**0.13**

The data from this survey concur with those of the Ministry's 1997 annual educational statistics which showed a higher drop-out for girls from Standard 3 onwards. Factors that contribute to this gender gap are mainly early pregnancies and marriages for mature girls, and also long distances between home and school which make some parents reluctant to send their daughters to school. In addition, girls often drop out because of poverty or because they have become orphans due to AIDS. The Ministry needs to conduct a survey to establish the main reasons for the relatively higher drop-out rate for girls, and then develop measures to address the situation.

Policy Suggestion 3.4 (a): The Ministry should ask the Planning Unit to conduct a study to establish the main reasons for lower participation rates among girls.

Policy Suggestion 3.4 (b): The results of the study of girls' participation rates (see *Policy Suggestion 3.4 (a)*) should be used by the Ministry to develop a national policy for the education of girls.

c) Books in the home

Research studies in many countries have indicated that there is a relationship between availability of books in the home and pupil reading achievement (Elley, 1992). The pupils in the survey were asked to indicate the approximate number of books in their homes. The

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question had the following responses: No books in the home, 1-10 books in the home, 11-50 books in the home, 51-100 books in the home, 101-200 books in the home, and more than 200 books in the home.

The mid-point of each value range was used to estimate the total number of books in the home. For example, the first response ('no books') was coded as zero, the second response (1-10 books) was coded 5, and so on.

From *Table 3.1*, it can be seen that the average number of books in pupils' homes was less than 15 for all divisions except South West. The Divisions of North, South East and Shire Highlands registered the lowest means of 10 or less books. In order to address the problem of a shortage of books in pupils' homes it would be desirable if the Ministry could take action to establish well-stocked classroom and school libraries from which pupils could borrow books to take home to read. However, it must also be recognized that library provision across many schools is very costly and in Malawi's case should be viewed as a long-term planning goal.

A less costly option for the government would be to work with non-governmental organizations and the National Library Service in order to establish reading centres throughout the country and/or introduce mobile libraries. The organization and management of the centres should be such that they involve representatives of the local community – such as literate community leaders and teachers. The involvement of teachers will ensure that books selected are relevant, and of an appropriate linguistic level. Literate members of the local community could help to prevent the problem of book losses and could assist with the general maintenance of reading materials and library premises. These kinds of community libraries would help to make up for a shortage of books in homes.

Policy Suggestion 3.5: The government should work with non-governmental organizations and the National Library Service to explore new low-cost approaches to increasing student access to books (for example, through the setting up of community reading centres and mobile libraries).

d) Possessions in the home

The pupils were asked which of the following 14 items were in their homes: daily newspaper, weekly or monthly magazines, radio, TV set, video-cassette recorder (VCR), cassette player, telephone, refrigerator, car, motorcycle, bicycle, piped water, electricity, and a table to write on. These items were identified as reflecting material wealth and therefore providing an indication of the socio-economic circumstances of pupils' homes.

The national average for possessions in the home was 4.5 possessions, as indicated in *Table 3.1*. The North and Shire Highlands Divisions had the lowest means of 3.6 and 4.1 possessions, respectively. It should be noted that most of the schools in these divisions were in rural areas that lacked electricity and therefore it was expected that there would be fewer items that depended upon electricity. The few pupils who indicated that they possessed most of the items were from highly urbanized areas such as Blantyre, Zomba, and Lilongwe. It is in these areas that many of the parents of these pupils are working and therefore can afford some of the items

e) Meals

Pollitt (1990) has pointed out that poor nutrition results in a lack of concentration and reduced perseverance in school. The Malawi 1995 National Plan of Action for Nutrition also stated that malnourishment can contribute to impaired cognitive development in children. Regularity of meals was therefore seen as a factor likely to influence the acquisition of reading skills. In this study, pupils were asked the number of meals they ate in a week. These meals were breakfast, lunch and dinner. If a pupil ate no meals at all, the score was 3, whereas if he or she had eaten all meals, the value was 12.

The means and sampling errors for the 'Index of Regular Meals' have been presented in *Table 3.1*. The national mean was 11.2. The results indicated that the average Standard 6 pupil ate meals regularly. However, nothing is known about the quality of the meals. Since there is a question about this in the minds of many in Malawi, further investigation needs to be undertaken because some of these meals could be unbalanced and contribute to high levels of sickness and mortality.

Policy Suggestion 3.6: The Ministries of Education and Health should review and improve policies related to the school health nutrition framework so that they are able to conduct routine medical checks in schools in order to identify malnourished children.

f) Parent education

Parental education is very important and can be related to pupil achievement because educated parents can help a child with homework or schoolwork and they are more likely to be able to check progress.

Questions were asked in the pupil questionnaire about the level of education that parents had received. The information was coded as follows: did not go to school = 1; completed some primary school = 2; completed all of primary school = 3; completed some secondary school = 4; completed all of secondary school = 5; completed some education and/or training after secondary school = 6.

The answers for each child's mother and father were summed to provide an index of parents' education. In *Table 3.1*, the national average value was 6.0. The range of values across divisions for this index was small. The Central East Division had the lowest value of 5.5, and the highest value of 7.0 occurred for South West Division.

g) Speak English at home

English is the medium of instruction from Standards 5 to 8 and also in secondary schools in Malawi. However, several local languages are spoken outside of school. The reading test used in this study was in English because the medium of instruction in Standard 6 was English.

From *Table 3.2*, it can be seen that 73.7 percent of the Standard 6 pupils indicated that they spoke some English at home (sometimes, often, or all of the time). There was some variation from the highest value of 79.3 for Central West Division down to South West Division with 65.8 percent.

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Table 3.2. The percentages, means, and sampling errors for selected pupil background characteristics (school related)

Division	Speak English		Days absent		Extra lessons		Homework		Repetition	
	%	SE	Mean	SE	%	SE	%	SE	%	SE
North	69.1	7.49	4.3	0.36	17.6	5.05	18.8	7.78	62.4	5.65
Central East	73.9	4.56	4.3	0.33	24.7	4.34	12.5	3.81	58.0	2.58
Central West	79.3	3.65	3.0	0.21	19.2	3.91	18.2	5.44	68.8	2.27
South East	74.2	6.14	4.0	0.48	18.2	3.53	14.9	8.44	59.1	4.00
South West	65.8	5.79	3.1	0.23	26.4	4.55	14.4	6.31	58.9	4.29
Shire Highlands	79.1	6.50	4.0	0.47	29.9	8.52	18.7	8.80	66.4	3.62
Malawi	**73.7**	**2.32**	**3.7**	**0.13**	**22.0**	**1.95**	**16.3**	**2.69**	**62.6**	**1.56**

h) Days absent in previous month

It is likely that pupils who are frequently absent from school will learn less and this will eventually contribute to low learning achievement. Some research studies in Malawi have shown that reasons for absenteeism vary according to geographical and seasonal factors. For example, during the rainy season pupils who learn in open-air classes abandon them. Another reason is washed away bridges and bad weather – especially during the cold season.

Cultural practices in some parts of Malawi may also affect absenteeism. For example, in certain communities, initiation ceremonies for girls and boys are sometimes conducted on school days and pupils are therefore required to stay away from school. The change in the School Calendar in 1997 created many problems for these communities because they need to hold their ceremonies in the months following harvest time, that is in September and October every year when households are well stocked with food. Similarly, some cultures practise what is known as 'mask dances' – and these take place during certain months of the school year. Since it is tradition that children participate in such events, they often stay away from school.

Economic factors may also play quite a big role in absenteeism. In some districts of Malawi child labour in tobacco or tea estates is common. Most school children go to these estates to work because they contribute to the income of their families. Such money-generating activities are very important in most parts of Malawi. Other activities that affect absenteeism include farming (at the household level, young boys own land and practise farming), domestic chores for girls, fishing along the lake shore area, distance to school, illness, funerals, harvesting, and brick-making. In some cases pupils must be absent from school in order to attend wedding functions (especially in August and September). Other pupils are absent from school on market days. This is very common in rural areas where a market is seen as a social gathering place.

As seen from *Table 3.2,* the average number of days of absenteeism was 3.7 for Malawi as a whole. The differences across divisions were very small. Divisions that registered low

numbers of absentees were Central West and South West, with 3.0 and 3.1 days, respectively. These results were obtained from pupils who actually attended school on the day of data collection for this study. On the day of testing, around one quarter of the pupils in the sample were absent from school. It is this statistic that is important and acts as an indicator of the degree of absenteeism on any one day. Absenteeism is therefore a major problem in Malawian schools. This problem needs the Ministry's immediate attention and measures need to be put in place to correct the situation.

Policy Suggestion 3.7: A household survey should be conducted to determine the main causes of absenteeism, and this information should be used to develop policies for decreasing and eradicating absenteeism.

i) Extra lessons

Extra lessons outside the official school timetable are common in Malawi. They mainly affect Standard 8 pupils before they take their national examinations. In some cases, extra lessons are conducted free upon the wish of the teacher (to ensure full coverage of the syllabus) while in other cases the parents want their children to have extra tuition and they pay for it. From *Table 3.2*, it can be seen that 22 percent of Standard 6 pupils take extra lessons. Although the number taking extra lessons at this level looks relatively small, it can be expected that the percentage will increase by Standard 8. Shire Highlands had the highest percentage (29.9 percent) of pupils taking extra lessons. This pattern of results probably occurred because parents in urban areas are more likely to be able to pay for extra lessons.

Policy Suggestion 3.8 (a): The Ministry should discuss, with stakeholders such as the Teachers Union and the Teaching Service Commission, issues related to the income that teachers receive for providing extra tuition and the possible conflicts of interest that can arise due to this practice.

Policy Suggestion 3.8 (b): The Ministry should institute a set of national regulations to govern the provision of extra lessons and private tuition – especially where these are provided by teachers.

j) Homework

Many studies have shown that homework helps children to learn. It is well known that if homework is given, marked, and worked through with children then there is considerable benefit. Pupils were asked how often they received homework. The possible responses were as follows:

(i) I do not get any homework;

(ii) once or twice per month;

(iii) once or twice per week;

(iv) most days of the week.

From *Table 3.2*, the results indicate that only 16.3 percent of Standard 6 pupils received regular homework (at least once or twice a week). Given the large standard errors of sampling for the divisional estimates, it was not possible to state that there were differences between the divisions. However, what is important is that the national percentage was low

and did not conform to the Ministry's required standards of classroom practices. All pupils were supposed to be given homework regularly since it is considered to be part of the teaching/learning process. The gap between reality and what the Ministry requires is large and requires the immediate attention of Primary Education Advisers. Teachers need to know the importance of giving homework. They should be encouraged to give pupils homework, mark it, and work through it with the pupils

Policy Suggestion 3.9: The Primary Education Advisers should be required to ensure that homework is given to all pupils regularly, and also to request that teachers mark and work through it with the pupils.

k) Grade repetition

Repetition can be understood either as the failure of the system to teach, or the failure of pupils to learn. From *Table 3.2,* it may be seen that the percentage of Standard 6 pupils that had repeated at least one grade was 62.6 percent. This result was very disturbing because such a high percentage is often linked to high drop-out rates. High rates of grade repetition increase the unit costs for educating a child. Repetition also often results in overcrowded classrooms at lower grade levels, which discourages new entrants into the system. Increases in the unit cost of providing a given level of education drain away valuable resources that might be better used to improve quality or increase access. According to the Ministry of Education's EMIS report for 1997, more girls repeat from Standard 1 to Standard 7. A worrying aspect of these research results is that there appears to be no systematic method used by schools to identify the pupils who will repeat.

Policy Suggestion 3.10 (a): The Ministry should develop a policy to ensure that decisions about grade repetition are linked to valid measures of pupil performance.

Policy Suggestion 3.10 (b): The current levels of grade repetition in Malawi are much too high and school heads should be told to reduce these levels.

What were the characteristics of Standard 6 teachers?

Some important characteristics of teachers were also measured. These concerned the age of teachers, sex of teachers, academic and professional qualifications, years of teacher experience, and the number of in-service courses attended. The results of the analysis of these variables have been reported in *Table 3.3.*

a) Age of teachers

The average age of Standard 6 teachers in Malawi was 30.7 years. This showed that the teaching force in Standard 6 was quite young. There was little variation among divisions.

b) Sex of teachers

In Malawi, 32.1 percent of pupils in Standard 6 had female teachers. This statistic agreed with the Ministry of Education's 1997 statistics that also portrayed a gender gap between male and female teachers in the higher Standards (6, 7, and 8) where there was a concentration of male teachers.

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From *Table 3.3*, the gender gap is very pronounced in the Central East and Shire Highlands Divisions – only 14.3 percent of Standard 6 pupils had female teachers in these two divisions. In the South East and South West Divisions around 45 percent of Standard 6 pupils had female teachers. To a certain extent these patterns can be explained by the tendency for female teachers to follow their husbands who often work in urban areas. An important issue to consider here is that, by tradition, most school heads tend to allocate more female teachers to the lower classes than to the senior classes.

Policy Suggestion 3.11: The Ministry should review existing arrangements for recruiting and posting teachers in order to improve teacher gender equity at the upper end of the primary school.

c) Years of academic education

In the survey, the teachers were asked to record the number of years (excluding grade repetition) of academic education (for example, primary, secondary and post-secondary education). On average, a Standard 6 pupil in Malawi was taught by a teacher who had received 12.0 years of education – usually in the form of eight years of primary education, followed by four years of secondary education. There was considerable variation among teachers on this variable – which indicated that quite a number of Standard 6 teachers had completed eight years of primary education, but not all of the four years of secondary-school education. There was little variation among divisions.

Table 3.3. The means, percentages, and sampling errors for selected teacher background characteristics

Division	Age (years)		Sex (female)		Academic education (years)		Teacher training (years)		Teacher experience (years)		In-service courses (number)	
	Mean	SE	%	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
North	33.9	1.	35.5	10.30	11.7	0.38	1.6	0.16	8.7	1.37	0.7	0.22
Central East	30.3	1.17	14.3	7.86	12.2	0.25	1.1	0.21	6.0	1.28	1.9	0.46
Central West	29.5	1.37	34.6	9.53	12.0	0.16	1.1	0.16	5.9	0.87	0.9	0.26
South East	29.1	1.67	44.1	12.11	12.1	0.22	1.2	0.24	7.5	1.76	1.6	0.55
South West	29.6	0.93	46.5	10.44	12.2	0.20	1.2	0.17	6.0	0.74	1.1	0.38
Shire Highlands	31.3	1.26	14.3	7.85	12.1	0.12	1.4	0.21	6.3	0.98	1.0	0.45
Malawi	**30.7**	**0.57**	**32.1**	**4.06**	**12.0**	**0.10**	**1.3**	**0.07**	**6.7**	**0.48**	**1.1**	**0.15**

d) Years of teacher training

The normal teacher training course in Malawi takes two years. However, there have also been one-year and three-year special programmes. From *Table 3.3*, it can be seen that the average pupil in Standard 6 was taught by a teacher with 1.3 years of teacher training. In the North and Shire Highlands Divisions, the mean values were 1.6 years and 1.4 years, respectively. These two divisions had a slightly higher number of professionally qualified teachers than the two Central Divisions (1.1 years), and the two South Divisions (1.2 years). The average length of teacher training for the nation was quite low (1.3 years). It was very surprising that even senior classes such as Standard 6 were being taught by teachers that had not completed the required two years of training. The variation among divisions illustrated the well-known pattern that better-qualified teachers do not like being sent to remote areas to teach.

Policy Suggestion 3.12 (a): The Ministry should assemble appropriate data to identify and assist schools with large numbers of untrained teachers.

Policy Suggestion 3.12 (b): The Ministry should review its policy for providing in-service education programmes for untrained teachers so that a higher priority is given to schools in rural areas.

e) Years of teaching experience

On average, Standard 6 pupils had teachers with 6.7 years of teaching experience. The number of years was 8.7 in the North Division and 5.9 in the Central West Division. This clearly indicated that North Division had more experienced teachers, followed by South East Division (7.5 years). The average number of years of teaching experience in this table showed, as stated earlier, that most teachers were quite young.

f) Number of in-service courses attended

Standard 6 teachers were asked to indicate the number of in-service courses that they had attended during their teaching career. From *Table 3.3*, it can be seen that Standard 6 pupils had teachers that had received very few opportunities for participation in in-service courses. The average for Malawi was only 1.1 and there was only a fairly small amount of variation in terms of the number of in-service courses attended across the divisions. Teachers in the Central East (1.9) and South East (1.6) Divisions seemed to have attended more in-service courses than those in other divisions. The North Division was the lowest (0.7), followed by the Central West Division (0.9), and Shire Highlands (1.0). This situation is very unsatisfactory because Standard 6 pupils were being mostly taught by teachers who were young, with not much experience, and who had rarely, if ever, attended any in-service courses.

In-service courses are important because they help to update and improve teachers' professional knowledge and skills. Thus, all teachers, and especially untrained teachers, should be given access to such training on a regular basis.

Policy Suggestion 3.13: The Ministry should work with a donor to provide resources to Teacher Development Units in order to establish a systematic programme of in-service training aimed at improving teaching skills – with priority given to untrained teachers.

What were the teaching conditions in primary schools?

In all countries that participated in SACMEQ's initial project, there was a great deal of interest in the resources made available to teachers for their teaching and the availability of basic supplies of classroom furniture. In order to assess these factors, Standard 6 teachers were given a checklist on which they indicated the availability of a range of classroom resources. The checklist contained some items covering teaching materials, while others covered classroom furniture. The percentages of Standard 6 pupils in classrooms with each of these items have been presented in *Table 3.4*.

a) Teaching materials and classroom furniture

The percentages presented in *Table 3.4* provide a very gloomy picture of the state of affairs in Malawi's primary schools. For example, it was certainly expected that items such as a usable chalkboard would be found in *every* Standard 6 classroom. However, it was found that only 86.1 percent of Standard 6 pupils were in classrooms that had a usable chalkboard. It was also found that a very low percentage of the pupils were in classes that had teaching materials such as maps, an atlas, and an English dictionary.

Table 3.4. Percentages of Standard 6 pupils in classrooms with selected teaching materials and classroom furniture

Item	Percentage with item	SE
Teaching materials		
Chalk	96.7	1.50
A wall chart of any kind	57.5	4.25
A map of Malawi	48.9	4.41
A map of Africa	36.6	4.24
A world map	33.3	4.18
A classroom library or book corner	13.5	3.04
An atlas	19.2	3.43
An English dictionary	54.7	4.20
Classroom furniture		
A usable chalkboard	86.1	2.92
A cupboard	18.1	3.27
One or more bookshelves	14.9	3.11
A teacher's table	41.3	4.29
A teacher's chair	43.9	4.27

Very few (13.5 percent) Standard 6 pupils were in classrooms with a classroom library or a book corner. This was disturbing, because all major reading studies have revealed that libraries are important in any school because they encourage pupils to read. In the absence of such facilities the reading skills of Malawi children cannot be enhanced. Only 18.1 percent of pupils were in classrooms with a cupboard and 14.9 percent in classrooms with bookshelves.

Basic classroom furniture for use by teachers was in acute shortage: there were only 43.9 percent of pupils in classrooms with a teacher's chair and 41.3 percent with a teacher's table.

The teacher responses concerning classroom resources were combined to form two scales. An Index of Teaching Materials (constructed by adding up the number of teaching material items that each teacher reported out of the total of eight items) and an Index of Classroom Furniture (constructed by adding up the number of items of classroom furniture that each teacher reported out of a total of five items). The mean scores for these indices across divisions, and for Malawi as a whole, have been reported in *Table 3.5*.

The average scores for Malawi for the Index of Teaching Materials and the Index of Classroom Furniture were 3.6 and 2.0, respectively. These results showed that there were clearly major problems in these two areas – with especially difficult conditions in Central East. The Divisions of Central East and South East were in most need of teaching materials and *all* divisions were in need of furniture.

A review of the situation concerning available teaching and learning materials by Ministry officials, provided information to indicate that these materials often do not reach schools because of poor distribution networks. It was suggested that this might be addressed by using Teacher Development Centres and Pay Centres as distribution points.

Table 3.5. Means and sampling errors for the Index of Teaching Materials and the Index of Classroom Furniture

Division	Index of Teaching Materials (8 items)		Index of Classroom Furniture (5 items)	
	Mean	SE	Mean	SE
North	4.0	0.42	1.9	0.29
Central East	3.0	0.44	1.0	0.23
Central West	4.0	0.40	2.4	0.27
South East	3.2	0.33	2.3	0.32
South West	3.6	0.48	2.3	0.27
Shire Highlands	3.5	0.36	2.3	0.29
Malawi	**3.6**	**0.17**	**2.0**	**0.11**

Policy Suggestion 3.14 (a): A national audit concerning the availability of classroom furniture and teaching materials should be undertaken.

Policy Suggestion 3.14 (b): The national audit of classroom furniture and teaching materials (see *Policy Suggestion 3.14 (a)*) should be used to guide the allocation of resources by donor agencies and community self-help groups.

Policy Suggestion 3.15: Teacher Development Centres and Pay Centres should be used as collection points for teaching and learning materials for schools that cannot be reached by delivery vehicles.

b) Pupils' books and materials in the classrooms

Items such as exercise books, notebooks, and writing materials are vital to an effective learning environment. The figures in *Table 3.6* showed the percentages of Standard 6 pupils in classrooms *lacking* these items. A notebook was defined as a book for writing that was 'not marked by a teacher' and an exercise book was defined as a book for writing that was 'marked by the teacher.' In *Table 3.6*, it can be seen that only 2.6 percent and 5.7 percent of Standard 6 pupils in Malawi lacked exercise books and notebooks, respectively. However, a major shortage of notebooks occurred in North Division, where 25.3 percent of Standard 6 pupils reported that they lacked this item. It was quite worrying to note that 37.9 percent of Standard 6 pupils did not have their own English reader or textbook. This result was in line with the 1997 School Census results that indicated a pupil/textbook ratio ranging from 1:1 to 1:10. This number of pupils with their own English reader or textbook was not satisfactory if better reading achievement of all pupils is to be obtained. The idea of pupils sharing textbooks cannot be ruled out completely, but the sharing ratio should be reasonable.

Table 3.6. Percentage of pupils reporting *lack* of basic learning materials and equipment (reader/textbook, exercise book, notebook)

Division	Percentage of pupils reporting *lack* of items					
	Reader/textbook		Exercise book		Notebook	
	%	SE	%	SE	%	SE
North	33.7	10.12	8.0	4.49	25.3	9.12
Central East	32.2	7.43	4.6	1.19	5.1	1.34
Central West	42.6	7.01	0.6	0.38	0.4	0.35
South East	42.0	10.91	0.4	0.45	1.1	0.61
South West	36.7	7.64	1.1	0.65	1.1	0.44
Shire Highlands	39.2	12.06	0.7	0.46	0.7	0.50
Malawi	**37.9**	**3.58**	**2.6**	**0.81**	**5.7**	**1.60**

Table 3.7. Percentage of pupils reporting *lack* of basic learning materials and equipment (pencil, ruler, eraser, pen)

Division	Percentage of pupils reporting *lack* of items							
	Pencil		Ruler		Eraser		Pen	
	%	SE	%	SE	%	SE	%	SE
North	44.8	9.11	86.7	3.88	70.0	7.98	10.0	5.37
Central East	24.3	5.18	66.2	5.67	68.5	5.15	11.4	4.27
Central West	17.7	4.07	44.8	4.76	53.6	5.08	0.4	0.25
South East	18.6	4.22	41.5	5.64	61.1	6.63	2.3	1.22
South West	25.0	4.43	42.4	4.02	53.7	5.07	4.8	1.42
Shire Highlands	12.2	4.93	40.7	5.33	46.8	8.36	3.1	1.21
Malawi	**24.4**	**2.35**	**54.2**	**2.14**	**59.2**	**2.55**	**5.1**	**1.20**

In *Table 3.7*, it can be seen that 24.4 percent of Standard 6 pupils reported that they did not have a pencil, while 54.2 percent lacked rulers, 59.2 percent lacked erasers, and 5.1 percent lacked pens. The results were generally very disappointing because these basic materials are essential for schoolwork and it is a 'must' that all pupils should have them. One wonders how pupils without these basic necessities fare in a classroom situation.

In general, the results in *Tables 3.6* and *3.7* showed that Standard 6 pupils lacked basic learning materials – both those supplied by the Ministry of Education and those that were expected to be supplied by parents.

Policy Suggestion 3.16 (a): The Ministry, using divisional planners, should conduct an audit of the state of learning/teaching materials in the schools.

Policy Suggestion 3.16 (b): The Ministry should seek partnerships with donors in order to strengthen resource capacity and to ensure equity and efficiency in the distribution of teaching and learning materials.

What aspects of the teaching function designed to improve the quality of education were in place?

A number of variables were examined with respect to quality improvement. These referred to teaching practices, teachers' perceptions of primary education advisers (inspectors), and some aspects related to job satisfaction. Specific issues examined were frequency of testing pupils and regularity of meetings with parents.

a) Frequency of testing

After combining the last two categories in *Table 3.8*, it could be seen that 86.1 percent of pupils had teachers who responded that they gave their pupils a written test in English two or three times per month or more regularly. This was a welcome result because tests enable teachers to set goals for themselves and then adopt teaching strategies appropriate to the achievement of these objectives (MOE, 1982).

Policy Suggestion 3.17: The Methods Advisory Unit should ensure that teachers are acting in accordance with the Ministry's policy on the evaluation of pupil performance as this is an effective tool for checking the effectiveness of the teachers, and for ensuring that the curriculum is covered.

b) Meeting parents

Postlethwaite and Ross (1992) have shown that in many countries, the more the school head and teachers have contact with parents, the more effective the school is in promoting the reading achievement of pupils. Hence a question was asked about the frequency of teachers meeting with parents. The results have been presented in *Table 3.9*.

Table 3.8. Percentages and sampling errors for the frequency of giving a written test to pupils

Division	Frequency of testing											
	No test		Once per year		Once per term		Two or three times per term		Two or three times per month		Once or more per week	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
North	4.6	4.56	0.0	0.00	0.0	0.00	9.1	6.11	45.6	10.89	40.8	10.74
Central East	0.0	0.0	0.0	0.00	0.0	0.00	19.0	8.82	33.3	10.58	47.6	
Central West	3.7	3.71	0.0	0.00	3.7	3.71	7.4	5.15	34.8	9.17	50.4	9.65
South East	0.0	0.0	0.0	0.00	0.0	0.00	17.6	9.59	29.4	11.46	52.9	12.55
South West	4.5	4.55	4.5	4.55	4.5	4.55	1.9	1.92	36.3	10.00	48.2	10.68
Shire Highlands	0.0	0.0	0.0	0.00	0.0	0.00	0.0	0.00	28.6	10.13	71.4	10.13
Malawi	**2.5**	**1.42**	**0.7**	**0.74**	**1.6**	**1.13**	**9.1**	**2.54**	**35.4**	**4.24**	**50.7**	**4.42**

Table 3.9. Percentages and sampling errors for frequency of teacher meetings with parents

Division	Never		Once per year		Once per term		Once (+) per month	
	%	SE	%	SE	%	SE	%	SE
North	25.7	9.30	13.7	7.52	49.9	10.93	10.7	6.40
Central East	23.8	9.56	4.8	4.78	42.9	11.11	28.6	10.14
Central West	11.1	6.18	7.4	5.15	63.0	9.49	18.5	7.63
South East	35.3	12.02	0.0	0.00	50.0	12.20	14.7	8.37
South West	28.9	9.65	7.0	5.06	24.8	9.16	39.3	10.45
Shire Highlands	28.6	10.13	9.5	6.58	38.1	10.89	23.8	9.55
Malawi	**24.2**	**3.74**	**7.4**	**2.32**	**46.2**	**4.34**	**22.2**	**3.56**

When the first two categories in *Table 3.9* were combined, about 32 percent of Standard 6 pupils had teachers who indicated that they met with parents 'once a year' or 'never', while about 46 percent indicated that they met with parents 'once per term', and about 22 percent met with parents 'once per month'. When the data were analyzed by divisions, there was substantial variation. For example, in the South East Division 35.3 percent of the pupils had teachers who never held meetings with parents, while the corresponding figure for Central West was much lower at 11.1 percent.

It would appear that the interaction between teachers and parents is very minimal in certain parts of the country. A lack of interaction between parents and teachers prevents parents from gaining information about the performance and welfare of their children. This poor interaction probably also means that parent/teacher associations are almost non-existent in many schools.

Policy Suggestion 3.18 (a): The Ministry should establish, publicize, and reinforce a national policy in all primary schools in order to (i) encourage parent-teacher interaction through 'open door' arrangements, and (ii) establish procedures to ensure that teachers know that they are required to meet with parents.

Policy Suggestion 3.18 (b): The Ministry should require the establishment of a parent/teacher association in each primary school.

c) Teachers' perception of the role of Primary Education Advisers

Some years ago, most teachers feared inspectors, and they were never accepted as colleagues or supervisors. That is why in Malawi the word 'Inspector' was changed to 'Primary Education Adviser (PEA)'. It was hoped that this would reduce the fear that most teachers felt. The teachers in this study were given an opportunity to describe their perceptions of the impact of the inspectors on their work. Their responses have been tabulated in Table 3.10.

Table 3.10. Teachers' perceptions of the role of the Inspectorate

Aspect of the role	Percentage of teachers agreeing	
	%	SE
Pedagogical role		
Bring new ideas	89.5	2.60
Clarify educational objectives	92.4	2.25
Recommend new teaching materials	85.3	3.05
Contribution to classroom teaching	63.2	4.20
Explain curriculum	83.0	3.25
Suggest improved teaching methods	90.8	2.51
Critical versus advisory role		
Comes to criticize	13.3	2.90
Comes to advise	96.6	1.58
Professional development role		
Encourage professional contacts with other teachers	88.1	2.88
Provide information for teacher self-development	68.8	4.04

The teachers responded under three broad headings that described the main dimensions of the work carried out by the PEAs: 'pedagogical role', 'critical versus advisory role', and 'professional development role'. Most teachers were quite positive about the role of the PEAs. Under the sub-heading 'pedagogical role', around 90 percent of Standard 6 pupils had teachers who perceived the PEAs as 'clarifying objectives', 'suggesting improved teaching methods', and 'bringing new ideas'.

In terms of the 'critical versus advisory role', 97 percent of pupils had teachers who were satisfied that many PEAs came to advise. Only 13.3 percent of the pupils had teachers who perceived the PEAs as people who came to criticize.

It is also interesting to note that 88 percent of pupils had teachers who were satisfied that the PEAs encouraged professional contacts with others and, at the same time, somewhat disappointing to note that only 69 percent of pupils had teachers who perceived the PEAs as providers of information for self-development. This outcome was disappointing when one considers the importance of this matter for the career paths of teachers. Teacher development should not be taken for granted because it is a very important motivation factor for teachers. If teachers are well motivated their performance also improves.

Another disappointing result was that only 63.2 percent considered that the PEAs made a 'contribution to classroom teaching'. The new role of PEAs carries the expectation that they will provide pedagogical leadership – but this was certainly not the case from the perspective of the teachers.

Policy Suggestion 3.19: The Ministry should arrange a meeting of the Primary Education Advisers in order to examine how they can improve their performance with respect to providing teachers with pedagogical guidance and information about professional development opportunities.

d) Sources of teacher satisfaction

Teacher motivation is a critical issue for any programme designed to improve the quality of education. The SACMEQ data collection included questions on sources of teacher satisfaction because it was widely believed that satisfied teachers work harder for the benefit of the pupils, and are less likely to leave the teaching profession.

Teachers in this study were given an opportunity to respond to 13 possible reasons for their job satisfaction. The 13 reasons have been grouped under five headings in *Table 3.11*: living conditions, school facilities/equipment, relationships with others, career advancement, and educational outcomes of pupils.

Under 'living conditions', the availability and quality of teacher housing (86.8 percent and 83.0 percent) were seen to be very important. This was not surprising because there is indeed an acute shortage of teacher houses, and most of the existing houses are not of good quality. If living conditions are uncomfortable, this would certainly affect the performance of teachers. It is quite interesting to note that only 69.4 percent of pupils had teachers who considered travel distance to school as important.

School facilities and equipment are contributing factors to the quality of education. In this category the teachers give the highest rating of 86.3 percent to the quality of classroom supplies.

In the area of 'relationship with others', over 80 percent of the pupils had teachers who gave a high importance to good relations with the community, with the school administration, and with other teaching colleagues. On 'career advancement', 87.3 percent of the pupils had teachers who rated professional development as important.

For 'educational outcomes of pupils', 83.0 percent of pupils had teachers who rated 'seeing pupils learn' as very important.

Table 3.11. Percentages and sampling errors for sources of teacher satisfaction

Source	Percentage of teachers indicating reason as 'very important'	
	%	SE
Living conditions		
Travel distance to school	69.4	3.91
Availability of teacher housing	86.8	3.03
Quality of teacher housing	83.0	3.23
School facilities/equipment		
Quality of school buildings	70.5	4.00
Quality of classroom furniture	63.2	4.24
Quality of classroom supplies	86.3	3.01
Relationships with others		
Quality of school manpower and administration	86.0	3.02
Amicable working relations with other teachers	86.8	2.93
Good relations with community	82.8	3.22
Career advancement		
Expanded opportunities for promotion	77.1	3.47
Opportunities for professional development	87.3	2.89
Level of teacher salary	80.3	3.49
Educational outcomes of pupils		
Seeing pupils learn	83.0	3.30

When the teachers had completed the checklist of 13 reasons for job satisfaction, they were asked to select the one reason that was the *most important* for them. The results for the selection have been presented in *Table 3.12*. It can be seen from the table that it was 'teachers' salaries' that was ranked as 'most important' for Standard 6 teachers.

Policy Suggestion 3.20: The Ministry should initiate a dialogue with the Teaching Service Commission to discuss teachers' concerns in order to identify strategies for addressing these concerns.

In the final column of *Table 3.12*, the divisions with the highest frequencies and the actual percentage rates have been presented. The most important concerns in North Division were salary and seeing pupils learn. In Central East it was professional development, classroom supplies in South Western, and school management in Central West.

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Table 3.12. Percentage and sampling errors for five reasons rated as 'most important' in a list of 13 reasons dealing with teacher job satisfaction

Five most important reasons	Percentage rating as 'most important'		Division with highest frequency
	%	SE	
Level of teacher salary	35.8	4.29	North (43.0%)
Seeing pupils learn	15.8	3.26	North (23.9 %)
Opportunities for professional development	15.5	3.11	Central East (28.6%)
Quality of classroom supplies	13.1	3.02	South West (23.8%)
Quality of school management	10.5	2.72	Central West (18.5%)

What was the general condition of school buildings?

The general condition of school buildings in Malawi was assessed by examining responses to questions asked of school heads about the state of their school buildings. This assessment looked at indicators such as repair status, classroom space, and the provision of toilets for pupils. The results have been presented in *Table 3.13*.

Table 3.13. The means and sampling errors for selected school building characteristics

Division	Repair status		Classroom space		Toilet provision	
	Mean	SE	Mean	SE	Mean	SE
North	65.2	10.16	0.6	0.06	86.1	31.70
Central East	76.0	8.72	0.4	0.04	109.3	15.38
Central West	66.7	8.75	0.4	0.04	127.9	28.45
South East	42.9	11.07	0.5	0.05	111.1	23.28
South West	66.7	9.83	0.4	0.08	153.9	21.66
Shire Highlands	62.5	10.09	0.5	0.05	118.4	35.69
Malawi	**64.1**	**3.98**	**0.5**	**0.02**	**117.8**	**11.06**

a) Repair status

The school head was asked to indicate the condition of his or her school buildings on a five-point scale with the following values: 5 = in good condition; 4 = some classrooms need minor repairs; 3 = most or all classrooms need minor repairs; 2 = some classrooms need major repairs, and 1 = school needs complete rebuilding. This variable was recoded so that it was possible to calculate the percentage of Grade 6 pupils in schools where school heads perceived that their schools were either 'in need of major repair' or 'needed complete rebuilding'. The results have been recorded in *Table 3.13*.

Overall, 64.1 percent of pupils were in school buildings that were perceived to be in need of major repairs or complete rebuilding. There was some variation among divisions – ranging from a low of 42.9 percent in South East Division to a high of 76.0 percent in Central East Division. This was very surprising because, since 1995, the Ministry of Education has embarked on a rehabilitation project of schools throughout the country. The Ministry has allocated a lot of resources to this project. In general, the figures presented in *Table 3.13* indicated that there was a need for the Ministry to seriously examine the state of school buildings and to share available school building resources in an equitable fashion.

Policy Suggestion 3.21: The Ministry should review and evaluate the impact and equity of the rehabilitation programme that has operated under the supervision of the Physical Facilities Unit.

b) Classroom space (square metres per pupil)

The value for this variable was obtained by dividing the whole of the internal area of all classrooms by the total number of pupils enrolled in the largest school shift. The national average value for classroom space was 0.5 square metres per pupil. This implied that, on average, each pupil was allocated 0.5 square metres in class. This amount of floor space per pupil is too small and indicates that available classrooms were overcrowded and that many pupils were receiving instruction in the open. Variations among the divisions were minimal.

c) Toilet provision

For Standard 6 pupils, there was an average of 117.8 pupils per one toilet. The ratio varied from 153.9 pupils per toilet (South West Division) to 86.1 pupils per toilet (North Division). The ratios are very high because most schools rely on temporary toilets that are constructed on a regular basis. To make matters worse, the toilets are not adequate and they often quickly fall into disrepair.

Policy Suggestion 3.22: Schools not having the required number of toilets should be identified and then parent meetings should be held in these schools to discuss the use of community participation to rectify this problem.

d) General school facilities

From *Table 3.14*, it can be seen that most Standard 6 pupils in Malawi were in schools that had inadequate school buildings and a lack of facilities such as staff rooms, school head's office, store room, school hall, etc. The only facilities that were available in reasonable quantities were school grounds – however, one would expect 100 percent availability of such facilities in schools. How were these primary schools constructed without adequate school grounds? This could probably mean that construction was undertaken without following the Ministry's guidelines. General services form part of the basic necessities that all schools should have. According to *Table 3.14*, the availability of general services (such as drinking water) was quite limited. The equipment items in the schools were very few and in certain schools they did not exist. The very few schools that had acquired equipment such as typewriters or duplicating machines were in urban areas where the proprietors were mostly missionaries. Typewriters and duplicating machines are essential for teachers to provide extra learning materials and to prepare written tests for pupils.

Policy Suggestion 3.23: The Ministry should review the list of available school facilities with a view to developing a priority list for future spending within the Policy Investment Framework.

Table 3.14. Percentages and sampling errors for pupils in schools with selected facilities

Facility	Percentage with facility	
	%	SE
School buildings		
School library	26.4	3.64
School hall	4.4	1.64
Staff room	20.2	3.33
School head's office	43.3	3.93
School secretary's office	2.1	1.18
Storeroom	32.2	3.83
Cafeteria	0.7	0.68
School grounds		
Sports area	62.9	4.05
Playground	85.4	2.96
School garden	66.1	3.92
General services		
Piped water	33.3	3.89
Well or borehole	52.2	4.16
Electricity	6.3	2.07
Telephone	7.5	2.15
Equipment		
Fax machine	1.4	1.0
Typewriter	10.6	2.60
Duplicator	6.3	2.02
Radio	8.5	2.29
Tape recorder	2.7	1.40
Overhead projector	0.0	0.00
TV	0.0	0.00
Film projector	0.0	0.00
Video-cassette recorder	0.0	0.00
Photocopier	0.0	0.00
Computer	0.0	0.00

What level of access did pupils have to books?

Elley (1992) showed that the more children were able to read books and the more that books were available for them to read, the higher would be their achievement in reading literacy. In this study, several questions were asked on the availability of classroom library, a school library, and if pupils were allowed to borrow books from these libraries. The responses to the questions have been summarized in *Table 3.15*.

a) Classroom library

An international study of reading literacy (Elley, 1992) involving 32 systems of education, showed that high levels of literacy were associated with the availability of classroom libraries from which pupils could borrow books. That is, it was the availability of classroom libraries, as distinct from school libraries, that was important in many countries. The Standard 6 teachers in this study were asked about the number of books in the classroom library or book corner. If there was no classroom library, the teacher was directed to record zero books. In *Table 3.15* the percentage of Standard 6 pupils who were in classrooms with a classroom library has been presented. At the national level only 24.0 percent of Standard 6 pupils were in classrooms with a classroom library. This implied that 76.0 percent of pupils were in classrooms with no such facility. There was some variation among divisions, with North Division having only 16.9 percent of pupils in classrooms with a classroom library and South West Division having 17.8 percent of pupils in such classrooms. Given the need for pupils to have access to books and other reading materials, measures for the provision of books need to be very high on the Ministry of Education's priority list.

Table 3.15. The percentages and sampling errors for pupils' level of access to books

Division	Library availability				Pupils permitted to borrow books	
	Classroom		School			
	%	SE	%	SE	%	SE
North	16.9	7.75	17.4	8.09	13.0	7.19
Central East	32.0	9.52	20.0	8.16	20.8	8.48
Central West	30.0	8.51	20.0	7.43	17.2	6.76
South East	23.8	9.52	33.3	10.54	33.3	10.54
South West	17.8	7.75	37.5	10.09	33.6	9.89
Shire Highlands	20.8	8.47	37.5	10.09	30.4	9.82
Malawi	**24.0**	**3.56**	**26.4**	**3.64**	**23.6**	**3.50**

b) School library

In Malawi, public libraries are scarce, particularly in rural areas. The same situation applies to most primary schools. They do not have libraries that can assist in developing and enhancing lasting reading habits of pupils before completing school (Mchazime, 1996). At the national level only 26.4 percent of Standard 6 pupils were in schools with a library. There appeared to be a 'dichotomy' in provision among the divisions, with three having around 10 to 20 percent (North, Central West, Central East) and three having around 30 to 35 percent (South East, South West, Shire Highlands).

c) Borrowing books

Lending books to pupils for them to take home to read is very important. A detailed inspection of the data showed that some schools did not lend library books to pupils – even when a library was available. For Malawi overall only 23.6 percent of Standard 6 pupils were permitted to borrow books. It is important for the Primary Education Advisers to sensitize all teachers to the importance of encouraging pupils to read while they are still young because it is reading widely that gives children a good foundation in reading for understanding.

Policy Suggestion 3.24 (a): The Ministry should explain to school heads that it is important for schools to have libraries – even on a small scale. School or classroom libraries should be accessible to all pupils and the borrowing of books should be encouraged.

Policy Suggestion 3.24 (b): The Ministry should work with appropriate donors to improve pupil access to books – for example by establishing a system of mobile libraries to which all pupils can have access.

Conclusion

Many surprising facts emerged from the analyses presented in this chapter. Together they paint a very bleak picture of the conditions of schooling for Standard 6 pupils in Malawian primary schools. A brief recapitulation of some of the facts bears out this pessimistic conclusion.

The pupils in Standard 6 were around three to four years older than they should have been. The age range within Standard 6 classes was very wide – making it difficult for teachers to teach effectively. Grade repeating was very high – which in part accounted for the wide age range and the higher average ages than expected. Class sizes were large. In general the children came from homes with very few books, thus making it impossible for them to be able to read at home. They did eat meals regularly, but nothing was known about the quality of the meals. The absentee rate was high, with up to a sixth of pupils being absent on any one day. The teachers were young, predominantly male, and with only a few years of teaching experience. Many of them had never been to an in-service training course. Homework was rarely given regularly to the pupils. The classroom resources were few. Although one would expect a usable chalkboard for each classroom, 14 percent of Standard 6 pupils were in classrooms without a usable chalkboard. Thirty-eight percent lacked their own textbook or reader. Resources in the schools were generally very poor. Sixty-four percent of pupils were in schools where the head perceived that major repairs were required. There was a scarcity of toilets. On average there were 118 pupils for one toilet, but many of the toilets were temporary! There was a major shortage of classroom space. Most schools did not have piped water or electricity. Very few typewriters or duplicating machines were available to be used by the teachers for producing learning materials or tests. Very few pupils were in schools with a school library. Classroom libraries or book corners were extremely rare.

These are but some of the data presented in this chapter. It is expected that many of the findings will be an eye opener to most responsible officers in the Ministry of Education.

A series of suggestions have been made and these will be taken up again in the last chapter of this report. It is clear that education in Malawi is at crisis point. It will take a massive effort by the Ministry of Education, community leaders, and donor agencies if the conditions of schooling are to be improved to an even minimal level where effective teaching and learning can take place.

Chapter 4

How do the conditions of schooling in Malawi compare with the Ministry's own benchmark standards?

Introduction

In this chapter, the discussion of schooling conditions has been extended beyond the descriptive account given in the previous chapter, to a comparative analysis in which these conditions are compared with reference to benchmark standards accepted for use by the Ministry of Education. This comparative analysis permits judgements to be made about key aspects of the educational environment in relation to the minimal levels of provision that the Ministry acknowledged as forming essential preconditions for successful learning. In those situations where no official benchmarks had been adopted by the Ministry, the approach taken was to apply standards that had been agreed to as being reasonable for the proper functioning of primary schools by the SACMEQ National Research Co-ordinators.

When conducting this study it was very difficult to locate the Ministry's benchmark standards. Some of these had been established a long time ago, and in a number of cases no published information appeared to exist. There is a need, therefore, for the Ministry to revisit existing benchmark standards and remedy any gaps. In particular, the introduction of Free Primary Education (FPE) requires the Ministry's benchmarks to be reviewed and revised with respect to the supply of teaching and learning materials, the recruitment of teachers and their required qualifications, and the condition and construction of classrooms.

Policy Suggestion 4.1: The Ministry should review, and publish in one document, benchmark standards for the educational environment that are deemed to be 'reasonable for the proper functioning of primary schools'.

Basic organizational features of schooling

The basic organizational features of schooling have always been of great interest to educational planners. These features must be managed properly in order to optimize the quality of the educational environment for all pupils. In the SACMEQ project, questions were addressed to school heads about total school enrolment, class size, the availability of classroom space for pupils, and staffing ratios. The results of the analysis of these questions and their linkages to standards specified by the Ministry have been presented in *Table 4.1*.

a) Total school enrolment (school size)

In Malawi, primary schools vary a great deal in terms of their enrolments. There are junior primary schools composed of Standards 1 to 4 and full primary schools composed of Standards 1 to 8. Their enrolments range from 400 to over 1,000 pupils per school. The Ministry's norm was put at not more than 800 pupils for the standard size of a school.

Table 4.1. Percentages and sampling errors for benchmarks related to the basic organizational features of schooling

Division	School size		Class size		Classroom space		Staffing ratio	
	% le 800	SE	% le 60	SE	% ge 1.40	SE	% le 60	SE
North	54.2	10.39	62.6	10.42	0.0	0.00	56.5	10.58
Central East	16.0	7.48	60.9	10.42	0.0	0.00	32.0	9.52
Central West	20.0	7.43	66.0	9.20	0.0	0.00	56.7	9.20
South East	23.8	9.52	44.1	12.11	0.0	0.00	47.6	11.17
South West	12.5	6.90	46.1	10.56	4.2	4.17	45.8	10.39
Shire Highlands	12.5	6.90	57.1	11.10	0.0	0.00	45.8	10.39
Malawi	**24.0**	**3.42**	**57.4**	**4.30**	**0.7**	**0.67**	**48.1**	**4.17**

From *Table 4.1,* it can be seen that only 24 percent of Standard 6 pupils were in primary schools that met the Ministry's benchmark of fewer than 800 pupils per school. The North Division had more than half (54.2 percent) of its pupils in schools that satisfied the Ministry's benchmark, while the rest of the divisions ranged from 12.5 percent to 23.8 percent. There is some evidence to suggest that high enrolments in some schools are due to the fact that many communities simply expand school enrolments as they wish – without reference to Ministry guidelines. The introduction of Free Primary Education has also caused many schools to expand their enrolments beyond official limits.

b) Class size

The Ministry's benchmark for class size was not more than 60 pupils per class. The results showed that only 57.4 percent of Standard 6 pupils were in classes that satisfied the Ministry's benchmark. In other words, 42.6 percent of Standard 6 pupils were in overcrowded classrooms. Heavily affected divisions were the South East (with only 44.1 percent meeting the benchmark) and the South West (46.1 percent).

Two possible reasons that contributed to differences among divisions were: (i) an inadequate number of teachers per school, resulting in teachers combining classes; and (ii) a lack of schools within a particular catchment area, resulting in higher school enrolment in existing schools.

Policy Suggestion 4.2 (a): The Ministry should address the issue of overcrowded classes through the redeployment of teachers in all divisions.

Policy Suggestion 4.2 (b): The Ministry should (i) place an official ceiling on school enrolment, and (ii) permit the opening of satellite schools where these are considered appropriate.

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c) Classroom space

In Malawi, the Ministry benchmark for classroom space is 1.4 square metres per child. The classroom space per child was calculated by dividing the total square metres available for classroom space in the school by the total enrolment in the largest shift.

In *Table 4.1*, it may be seen that less than 1 percent of Standard 6 pupils were in schools that met the Ministry benchmark for floor space. This situation should be a cause for concern. Either the classrooms were too overcrowded, or the measurements for the classrooms did not use the Ministry's norms. The latter could be true because there are many classrooms that were constructed through the District Development Committees which, in certain circumstances, bypassed the Ministry and ended up with poor structures not meeting the Ministry's standards.

Policy Suggestion 4.3: The Ministry should create an official standard for floor space per pupil in schools and classrooms, and then ensure that this standard is followed throughout the country by all stakeholders.

d) Staffing ratio (pupil/teacher ratio)

The Ministry's benchmark for pupil/teacher ratio is one teacher for sixty pupils (1:60). This measure is different from class size. Staffing ratio was calculated by dividing the total number of pupils in the school by the total number of full-time-equivalent teachers posted at that school. This measure reflects the 'wealth' of the school in terms of the number of teachers in it.

The final set of figures in *Table 4.1* shows that only 48.1 percent of Grade 6 pupils were in schools that satisfied the Ministry's benchmark. In the divisions, over 50 percent of pupils were in schools in North and Central West Divisions that satisfied the Ministry's benchmark. The lowest figure was for the Central East Division (32 percent).

Policy Suggestion 4.4 (a): The District Education Offices should be provided with resources to recruit teachers in order to address the problem of the high pupil/teacher ratio existing in many schools.

Policy Suggestion 4.4 (b): The District Education Offices should give staffing priority to the most needy divisions and schools.

Classroom furniture and supplies

There were nine areas related to classroom furniture and supplies that were employed in benchmark comparisons. In the absence of published benchmark levels in some of these areas, it was decided to apply the benchmarks established by the SACMEQ National Research Co-ordinators. The results of these analyses have been presented in *Table 4.2*.

Table 4.2. Percentages and sampling errors for benchmarks related to classroom furniture

Division	Sitting places (one p.p)		Writing places (one p.p)		Chalkboard (one p.cl)	
	%	SE	%	SE	%	SE
North	26.5	10.03	15.4	8.20	89.3	6.40
Central East	41.4	10.67	31.4	10.05	61.8	10.90
Central West	38.7	8.65	32.0	8.03	92.6	5.15
South East	18.4	9.39	17.1	9.13	93.9	5.92
South West	44.6	9.40	40.4	8.67	83.7	7.70
Shire Highlands	33.5	12.35	31.4	12.15	95.1	4.78
Malawi	**35.1**	**4.09**	**28.7**	**3.76**	**86.1**	**2.92**

Table 4.3. Percentages and sampling errors for benchmarks related to classroom supplies

Division	Exercise book (five p.p)		Notebook (five p.p.)		Pencils (one p.p.)		Rulers (one p.p.)		Erasers (one p.p.)		Ballpoint pen (one p.p.)	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
North	21.2	6.86	11.0	2.94	55.2	9.10	13.3	3.87	30.0	7.97	90.0	5.37
Central East	29.0	5.02	22.1	3.31	75.7	5.18	33.8	5.67	31.5	5.15	88.6	4.27
Central West	20.7	3.86	18.6	4.79	82.3	4.07	55.2	4.76	46.4	5.08	99.6	0.25
South East	25.8	5.89	17.3	3.52	81.4	4.22	58.5	5.64	38.9	6.63	97.7	1.22
South West	33.3	6.86	24.1	4.21	75.0	4.43	57.6	4.02	46.3	5.07	95.2	1.42
Shire Highlands	18.6	5.89	34.0	7.69	87.8	4.93	59.3	5.33	53.2	8.36	96.9	1.21
Malawi	**24.9**	**2.34**	**20.1**	**1.86**	**75.6**	**2.35**	**45.8**	**2.14**	**40.8**	**2.55**	**94.9**	**1.20**

a) Classroom furniture

The Ministry's benchmark for classroom furniture, that is, sitting and writing places, is one per pupil (one p.p.) and for a usable chalkboard it is one per class (one p.c.).

The results indicated that the provision of classroom furniture was very poor. Only 35.1 percent of Standard 6 pupils had sitting places and 28.7 percent had writing places. Only 86.1 percent of pupils were in classrooms with a usable chalkboard. These results plainly indicated that there was an acute shortage of classroom furniture in Malawi. It was only in the South West Division that pupils were somewhat better off (44.6 percent sitting places and 40.4 percent writing places). The Central East Division had only 61.8 percent of its pupils in classrooms with a usable chalkboard.

A lack of classroom furniture could result in pupils being physically uncomfortable – and this could destroy their normal posture which, in turn, would prevent them from writing properly, and result in them paying less attention to the teacher.

It is unfortunate that in some parts of Malawi, new classrooms are constructed without being furnished. The Ministry may well be creating a problem for itself that will prove to be difficult to rectify. However, some donor projects involved in the construction of schools are also supplying furniture for schools.

b) Classroom supplies

Classroom supplies are very important in a learning environment. Notebooks and exercise books are crucial items because they can be of help to teachers in their monitoring of the progress of pupils. In Malawi, these two items are used interchangeably. In this study, however, a notebook was defined as an item for writing which is not marked by a teacher, while an exercise book was defined as an item for writing marked by a teacher.

From *Table 4.3*, it can be seen that the results were generally unsatisfactory except for the supply of pens (94.9 percent). Only 24.9 percent and 20.1 percent of Standard 6 pupils had the benchmark requirements for exercise books and notebooks, respectively. Less than half of the pupils had rulers (45.8 percent) and erasers (40.8 percent).

The results showed that children from the more rural divisions were disadvantaged because most of the items were not available in their area.

Since the advent of Free Primary Education, a Supplies Unit was created by the Ministry of Education to be responsible for the supply of these items to primary schools. A lack of these items in schools can only be due to one of the following reasons: either there has been a failure on the part of the Supplies Unit to supply the items to schools adequately and efficiently, or there has been a failure on the part of the Ministry to finance the Supplies Unit adequately.

Policy Suggestion 4.5 (a): The Ministry should develop a database for the life span, shortfalls, and stocks available for each item of classroom furniture, as well as noting disparities among divisions.

Policy Suggestion 4.5 (b): The Ministry should draw up strategies in order to address the provision of adequate classroom furniture and supplies throughout the country.

Academic and professional qualifications of teachers and school heads

In Malawi, the minimum academic qualification required for a pre-service primary teacher-training programme has changed over the years. In the 1960s the minimum entry was a Primary School Leaving Certificate and in the 1970s it was raised to a Junior Certificate. In mid-1998, the minimum entry to a teacher-training programme was changed to a Malawi School Certificate of Education (MSCE), the equivalent of an 'O' level certificate.

Teachers in Malawi have attended different training programmes ranging from one year to three years in duration. Some teachers have attended crash training programmes like MASTEP – which was composed of class teaching of student teachers during school holidays and full-time teaching when schools were in session. In 1996, another primary school teacher-training programme was introduced. This was known as the Malawi Integrated In-service Teacher Education Programme (MIITEP). It was introduced to train a large number of untrained teachers within a period of four years. The course was composed of a three-month residential course and thereafter the student teachers went back to schools as full-time teachers while they received on-the-job training.

After training, teachers are expected to attend an in-service course from time to time. As of 1999, the Ministry had no benchmark for the number of times a teacher should attend in-service training courses. From the results in *Table 4.4*, it can be seen that 49.5 percent of Standard 6 pupils had teachers who had attended at least one in-service course. This implied that half of all Standard 6 pupils had teachers who had *never* attended an in-service course. It was only in the Central East Division (71.4 percent) and South East Division (62.0 percent) that more than half of Standard 6 pupils had teachers who had attended an in-service course. It would appear that the Ministry needs to improve opportunities for more teachers to attend important professional development opportunities.

a) Teacher qualifications

The benchmarks for teacher qualifications were the same as those for school heads and the changes that applied to school heads also applied to teachers. As stated earlier, the benchmark for entry to a teacher course was an 'O' level certificate.

As can be seen from *Table 4.4*, 90.9 percent of Standard 6 pupils had teachers with an 'O' level certificate. There was some variation among the divisions, ranging from 86.6 percent in the North Division to 95.5 percent in the South West Division.

Table 4.4. Percentage and sampling errors for benchmarks related to the qualifications of teachers and school heads

Division	Teachers						School heads			
	Academic qualifications		Professional qualifications		In-service courses		Academic qualifications		Professional qualifications	
	%	SE	%	SE	%	SE	%	SE	%	SE
North	86.6	7.41	63.6	10.53	43.5	10.44	87.0	7.19	91.3	6.01
Central East	90.5	6.59	28.6	10.14	71.4	10.14	80.0	8.16	72.0	9.17
Central West	88.9	6.18	37.5	9.16	41.4	9.57	80.0	7.43	96.7	3.33
South East	91.2	6.45	29.4	11.46	62.0	11.82	85.7	7.82	85.7	7.82
South West	95.5	4.55	33.2	9.61	45.3	10.47	83.3	7.77	91.7	5.76
Shire Highlands	95.2	4.78	47.6	11.20	38.1	10.89	95.8	4.17	83.3	7.77
Malawi	**90.9**	**2.58**	**40.6**	**4.21**	**49.5**	**4.31**	**84.6**	**3.06**	**87.5**	**2.68**

The benchmark for the professional qualifications of teachers was a minimum of one year. The results indicated that 40.6 percent of Standard 6 pupils had teachers who met the Ministry's benchmark. The percentages in the divisions ranged from 28.6 in the Central East Division to 63.6 in the North Division. Thus, more than one half of Standard 6 pupils were being taught by teachers who were not professionally qualified. This was not in accord with the Ministry's policy of placing only qualified teachers in the senior and infant classes. There is not only an inequitable distribution of professionally qualified teachers across divisions, but also a deficit in the number of qualified teachers.

The situation concerning the academic and professional qualifications of school heads presented a better picture than was the case for teachers. Around 85 percent of Standard 6 pupils were in schools where the school head had satisfied the Ministry's benchmarks for academic and professional qualifications.

Policy Suggestion 4.6 (a): The Ministry should undertake a detailed analysis of the professional training needs of teachers for *all* standards in primary schools.

Policy Suggestion 4.6 (b): A detailed analysis of professional training needs should be used to review policy concerning long-term plans for increasing the number of trained teachers through extensive in-service and on-service training programmes.

Conclusion

This chapter has examined the conditions of schooling in Malawi based on the Ministry's benchmark figures and, where these were not available, benchmarks established by the SACMEQ National Research Co-ordinators. A large number of indicators of the general conditions of schooling were examined: basic organizational features of schooling, classroom furniture and supplies, and the academic and professional qualifications of teachers and school heads.

The four indicators under 'basic organizational features' dealt with school size, class size, classroom space, and the school staffing ratio. Policies suggested were mainly linked to the Ministry's current benchmarks, overcrowded classrooms, limited classroom supplies, and the identification of many teachers of Grade 6 pupils that did not satisfy the benchmark for professional qualifications.

Within the general area of classroom furniture and supplies, a number of indicators were examined: availability of sitting places, writing places, chalkboard, exercise books, notebooks, pencils, rulers, erasers and ballpoint pens. The situation relating to classroom furniture (sitting places, writing places) was not satisfactory and the Ministry needs to work with school communities and donors to address major shortages.

The indicators of the academic and professional qualifications of teachers and school heads summarized the formal and in-service education and training that they had received. The policy suggestions in this area indicated that problems of unqualified teachers should be rectified urgently. There was also a big gap in the total number of teachers who had undergone in-service training, all divisions were low on this benchmark.

Chapter 5

Have educational inputs to primary schools in Malawi been allocated in an equitable fashion?

Introduction

One of the goals of education in Malawi is to give all pupils an equal opportunity to learn. This cannot be achieved unless there is an equitable distribution of educational resources among all schools. In Malawi the equitable distribution of resources is the responsibility of a special unit that has a mandate to identify needs and associated distribution requirements.

In all school systems where the government wishes to take action to address the issue of equity, it is important to know the 'location' of differences or variations in resource inputs to schools. For example, it is important to know whether variations in resource inputs are more pronounced among divisions, or whether they are larger among schools within divisions. An answer to this type of question provides guidance concerning which resources are distributed evenly or unevenly, and at the same time suggests the level at which decisions must be taken (national or divisional) in order to address any major inequities that are observed.

In exploring questions of equity, it must be recognized that there is a need to examine allocation patterns in association with the actual levels of provision. Such information is vital because it enables policy-makers to identify which resources require attention, and also to have some feeling for the amounts of supplementary resources that may be needed in order to achieve a more equitable distribution.

This chapter concentrates mainly on an examination of inequities in the distribution of educational resources and not upon absolute resource levels. Hence the results presented in this chapter should be examined in conjunction with results presented from the two previous chapters, which examined baseline and benchmark resource allocations.

Two approaches to the measurement of equity

a) Variation among divisions

A statistic called the coefficient of intra-class correlation (rho) may be used to divide the variation in resource inputs into two components: (a) among divisions, and (b) among schools within divisions. Rho can range from nearly 0.00 to 1.00. When used in this way, rho is a ratio that measures the percentage of total variation among schools that can be attributed to variation among divisions. The residual figure measures the average variation among schools within divisions.

To appreciate the meaning of rho, it is useful to consider two hypothetical school systems: system A and system B. In school system A, resources are allocated equally, or nearly equally, to all schools and, therefore, when calculations are made of the average resource levels for the divisions in the system, one finds that these are more or less the same – except perhaps for some minor chance deviations. For such a school system, the value of

rho would be close to zero because of the small variation among divisions. In this situation most of the variation would be among schools within divisions.

On the other hand, consider school system B where, because of administrative decisions, historical factors, or geographical differentiation of social-class groups, etc., there are large variations among the divisions. In this case, the value of rho would be large – perhaps approaching unity. Most of the variation among schools in this case would be due to variations among divisions, and there would be little variation among schools within divisions.

The above examples are two extremes that serve to illustrate the interpretation of rho. In practical terms, if the intention is to judge whether the variation is more among divisions or more among schools within divisions, a rho of, say, 0.20 means that 80 percent of the differences are among schools within divisions and 20 percent among divisions. In contrast, a rho of 0.80 would indicate that 80 percent of the differences are among divisions and 20 percent among schools within divisions.

b) Variation among schools within divisions

It is also possible to quantify the differences among schools within a particular division by making a comparison with the variation among schools at the national level. This can be achieved by using the formula below:

$$\frac{\text{Standard deviation for schools in a division}}{\text{Standard deviation for schools in the nation}} \times 100$$

The standard deviation of an indicator for a particular division measures the amount of variation among schools within that division, whereas the standard deviation for the whole country measures the amount of variation among schools for the nation. The ratio of the standard deviation for a division to the standard deviation for the nation, expressed as a percentage, provides a measure of the degree of equity within a division compared with the national picture.

To illustrate the interpretation of these ratio values, it is helpful to consider two hypothetical divisions: Division A and Division B. Assume that the levels of a resource are measured by an indicator that has a ratio value of 50 percent in Division A and 150 percent in Division B.

These figures would mean that the variation in resource levels among schools in Division A is 50 percent less than the variation in resource levels among the schools for the whole nation; and the variation in Division B is 50 percent higher than for the nation. From these ratio values it can be said that, compared with the national picture, there has been an equitable allocation among schools within Division A. In contrast, the Ministry should be concerned about Division B because there is clear evidence that inequalities among schools in Division B are larger than for the whole nation.

Table 5.1. Equity of material resource distribution to schools as assessed by (a) Variation among schools within regions, and (b) Variation among divisions

Material resources	Variation among schools within divisions						Variation among divisions (rho × 100)
	1	2	3	4	5	6	
Class furniture index	101.7	101.8	89.6	97.5	91.4	95.3	7.9
Class supplies index	101.6	107.7	106.1	70.3	113.1	84.0	0.7
Toilets per pupil	114.5	115.4	58.0	78.4	80.0	131.8	1.4
Classroom library (%)	86.9	125.2	118.9	71.6	87.3	88.9	0.9
Classroom space per pupil	106.3	86.0	73.3	75.9	143.8	86.9	3.5
Teacher housing quality	92.9	108.3	110.2	74.0	114.6	92.7	2.3
School resources index	73.0	108.3	75.9	104.0	123.9	89.9	4.9

Note: 1 = North, 2 = Central West, 3 = Central East, 4 = South East, 5 = South West, 6 = Shire Highlands.

Table 5.2. Equity of human resource distribution to schools as assessed by (a) Variation among schools within regions, and (b) Variation among divisions

Human resources	Variation among schools within divisions						Variation among divisions (rho × 100)
	1	2	3	4	5	6	
Teacher professional qualifications	77.9	93.1	107.6	111.4	91.5	116.2	1.0
Teacher academic qualifications	167.4	73.5	103.4	81.8	84.2	49.1	0.7
Teacher experience	119.8	84.3	108.9	134.4	65.1	83.5	0.0
School head academic qualifications	96.4	82.0	154.2	80.6	79.3	86.8	0.7
School head professional qualifications	61.5	109.2	119.9	106.3	60.3	106.7	5.4
School head experience	89.0	84.7	68.4	125.7	96.3	130.0	0.1
Inspectors' visits	137.0	92.4	106.3	40.3	62.1	104.0	7.1
Pupil/teacher ratio	69.6	83.1	113.9	82.5	124.0	101.6	4.8

Note: 1 = North, 2 = Central West, 3 = Central East, 4 = South East, 5 = South West, 6 = Shire Highlands.

Equity calculations for material resource inputs

In the final column of figures in *Table 5.1*, values of rho (multiplied by 100) have been presented. These figures provide a measure of variation among divisions. It can be seen that there was not much variation among divisions for the material resource inputs. However, the general input of material resources was low, as witnessed by the results in the previous two chapters. Thus, what few resources were available were distributed more or less equally among divisions.

When the variation among schools within divisions was examined, it was clear that there were problems in the divisions of Central West, South West and Shire Highlands. If 120 percent is used as the cut-off point for variation of the distribution of resources among schools within divisions, then there were the following problems:

Central West: Classroom library.

South West: Classroom space and school resources.

Shire Highlands: Toilets per pupil.

Policy Suggestion 5.1(a): The Ministry should note the dearth of material resources described in Chapters 3 and 4 and then hold serious negotiations with donors in order to establish long-term plans to overcome the deficit.

Policy Suggestion 5.1(b): The Divisional Education Offices for Central West, South West, and Shire Highlands should examine inequities in the distribution of certain material resources among their schools and bring forward proposals to rectify the situation as soon as possible.

Policy Suggestion 5.1(c): The Ministry should ensure that school heads and other responsible authorities are informed regarding the Ministry's list of material resource inputs to schools and their associated benchmark levels

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Equity calculations for human resource inputs

In *Table 5.2*, the results have been presented for the assessment of equity in human resource inputs (a) among divisions, and (b) among schools within divisions.

The variation among divisions was quite small. This finding, as mentioned above, needs to be taken along with the information in the previous chapters, which showed a generally low level of provision for all divisions.

Again, using a cut-off point of 120 percent for examining where the variations in the distribution of human resources is greater among schools within a division than for the country as a whole, the following problems were identified within particular divisions:

North:	Teacher academic qualifications and visits by inspectors (PEAs).
Central East:	School heads' academic qualifications.
South East:	Teacher experience and school-head experience.
South West:	Pupil/teacher ratio.
Shire Highlands:	School-head experience.

The reallocation of human resources is not an easy task. The government needs to have adequate financial resources to transfer teachers and school heads from one school to another. Even if resources are available, it is not easy to persuade staff with better qualifications and more experience to go to places far from their home and family. In Malawi, there was a policy that required teachers to teach in the region of their origin. Although this policy seems to have fallen into abeyance after the introduction of Free Primary Education, most teachers still feel more comfortable to teach in areas that are close to their original home. The problem concerns the kinds of incentive that can be used to attract staff to less, from their point of view, interesting areas.

Policy Suggestion 5.2: The Divisional Managers of Education in North, Central East, South East, South West, and Shire Highlands should take action to ensure a more equitable distribution of human resources among schools. Since this is not an easy task, the Ministry should devise and try out measures to attract teachers and school heads to less popular areas.

Policy Suggestion 5.3: The Divisional Offices should develop and maintain a database of human resources in each school in their jurisdiction with respect to staff academic and professional qualifications, and PEAs' visits.

Conclusion

This chapter has examined equity of human and material resource allocation among schools within divisions and among divisions. Generally the results indicated that the variation in the distribution of human and material resources among divisions was not high. The noticeable variation was mainly among schools for certain resources within certain divisions.

Variation among schools within some divisions appeared to be a problem for some human and some material resource allocations. The allocation of certain resources was not equitable and it was suggested that it was the duty of the Ministry, through its divisional offices, to ensure that this situation was rectified. It would help if a monitoring mechanism was put in place so that Divisional Directors and Ministry officials were aware of the situation on a regular basis, rather than having to wait for studies such as the present one.

Chapter 6

What is the level of achievement for Standard 6 pupils overall and in the three domains of reading literacy?

Introduction

This chapter seeks to answer the question: what is the level of reading for Standard 6 pupils overall and in the three domains of reading literacy? First, a brief explanation of the structure and content of the test that was used to assess the reading performance of Standard 6 pupils has been presented. This is followed by a description of how the reading specialists of the Ministry of Education identified two cut-off scores for the test that corresponded to minimum and desirable levels of reading achievement. The results for the percentages of pupils achieving the minimum and desirable levels of mastery have then been presented. The chapter concludes with an examination of pupil performance in three key domains of reading literacy: narrative, expository, and documents.

The structure of the reading test

The reading test was constructed as a team research project by the SACMEQ National Research Co-ordinators. The test aimed to provide a valid measure of basic literacy skills for Standard 6 pupils in all countries participating in SACMEQ's initial project. Reading specialists from different countries also reviewed the test items in order to eliminate items that were not suitable due to language, content, and cultural bias. The items were trial-tested and finally 59 items were assembled after a comprehensive analysis of: (a) the psychometric characteristics of the test items, and (b) the balance of the test across the main reading content and reading skill areas. The final test of 59 items covered the three main dimensions of reading literacy as described in an earlier chapter: narrative (21 items), expository (23 items), and documents (15 items).

The structure of the reading test has been summarized in *Table 6.1*. The first column presents a list of the names of the topics used for the passages in the reading test. In the next three columns the passage has been allocated to one of the three dimensions of reading. The final two columns give the total number of questions for each topic and the number of questions that were nominated as being essential according to the procedures outlined below. For example, the topic of the first passage in the test was a story about a little boy called Tembo. This was a narrative passage that was linked to a total of five questions, of which all five were considered essential.

The subset of 44 'essential' items was selected from the 59 items by a panel comprising a group of four experienced Standard 6 teachers, two primary education advisers, and two research co-ordinators. The panel was assigned to read through the passages in the pupil test with the aim of identifying those items deemed to be essential for Standard 6 pupils in Malawi to master if they were to commence a successful year of study in Standard 7.

The construction of five test scores

a) The total score on the 44 essential items

The first score that was constructed was a total test score on the 44 essential items that composed the test. Pupils were given a score of '1' for each correct item and '0' for each incorrect item – the total score was then calculated as the sum of these values.

Table 6.1. The structure of the reading test (topics, dimensions, total questions, and essential questions)

Reading test topics	Dimension			Total questions	Essential questions
	N	E	D		
Tembo	✓			5	5
Bird	✓			5	4
Island			✓	4	1
Joseph	✓			5	5
Oranges		✓		4	4
Maria			✓	3	2
Quicksand		✓		3	2
Empty bottles			✓	4	1
Carrots		✓		5	5
Temperature			✓	4	3
Maize		✓		6	4
Grandpa	✓			6	5
Tree		✓		5	3
	21	**23**	**15**	**59**	**44**

Note: N = narrative, E = expository, and D = documents.

b) Two mastery scores based on standards set by the Ministry reading specialists and Standard 6 reading teachers

Two mastery scores were constructed from the subset of 44 essential items selected from the total of 59 test items. The panel that had selected the essential items agreed on what would be a 'minimum' level and a 'desirable' level of performance on these 44 essential test items. To achieve the minimum level of performance a pupil was required to obtain correct answers for 24 of the 44 items. To achieve the desirable level of performance a pupil was expected to obtain correct answers for 33 of the 44 items. Thus these two scores represented dichotomous designations of mastery at two levels of performance.

It is extremely important to note that all of this work was completed *before* the data had been collected and processed. That is, the minimum and desirable performance standards were based on the professional knowledge and experience of Malawian reading specialists – and not on the (commonly used but somewhat arbitrary) approach of selecting cut-off points after an inspection of the distribution of reading scores.

c) Three sub-scale scores based on three sub-dimensions of reading

A further three test scores were based on the three sub-dimensions described above. That is, the total pool of 59 items was split into three subsets: Narrative (21 items); Expository (23 items); and Documents (15 items) and pupils scores were calculated for each subset.

Analyses of overall mastery levels

The mean scores for the 44 essential items and their sampling errors have been presented for each division and for Malawi overall in *Table 6.2*. In the same table, the percentages of Grade 6 pupils reaching minimum and desirable levels have been presented.

The mean score on the 44 essential items was 16.0. This level of performance was much lower than had been expected. The overall test was deemed to be good. Furthermore, the 44 essential items had been selected by Malawi reading specialists because of their relevance in Malawi with respect to further study in Standard 7. Performance across the divisions was uniformly poor and ranged from the lowest of 14.1 (North Division) to the highest of 17.9 (Shire Highlands Division).

In the last two pairs of columns, as stated earlier, the percentages of Standard 6 pupils reaching the minimum and desirable levels of mastery have been presented. These percentages have been given along with the values of the relevant sampling errors (SE), which provide information with which to place error limits around the sample estimates of population characteristics.

From *Table 6.2*, it can be seen that only 21.6 percent of Standard 6 pupils in Malawi reached the minimum level of mastery on the reading test. Only 0.6 percent reached the desirable level of mastery. In other words, 78.4 percent of pupils did *not* reach the minimum level prescribed by the reading specialists in Malawi and 99.4 percent did *not* reach the desirable reading level. This is indeed a deplorable state of affairs and is an indicator of the magnitude of the problem that the Malawian education system is facing.

There are several factors that may have contributed to this poor performance. These include overcrowded classrooms, a lack of textbooks and other materials, a lack of books to read (classroom and school libraries), absenteeism and dropping out of school and then rejoining later, as well as poor teaching. All of these factors combined were likely to contribute to low levels of performance for Standard 6 pupils.

Table 6.2. Mean performance on 44 essential items and percentages of pupils reaching minimum and desirable levels of mastery

Division	Performance on 44 essential items		Percentage reaching minimum level of mastery		Percentage reaching desirable level of mastery	
	Mean	SE	%	SE	%	SE
North	14.1	0.42	8.5	2.64	0.0	0.00
Central East	15.4	0.34	17.0	2.17	0.3	0.32
Central West	16.3	0.64	22.9	4.21	1.4	0.99
South East	16.5	0.41	27.4	2.88	0.0	0.00
South West	16.4	0.58	25.2	3.89	0.8	0.65
Shire Highlands	17.9	0.65	35.5	5.64	0.7	0.68
Malawi	**16.0**	**0.24**	**21.6**	**1.60**	**0.6**	**0.30**

For the minimum level of mastery there was considerable variation among divisions, ranging from 8.5 percent in the North Division to 35.5 percent in Shire Highlands. But, even in Shire Highlands Division, it can be seen that there were still 64.5 percent of pupils who did *not* reach the minimum level of mastery. For the desirable level of mastery the case was much worse and hardly any child in any division reached the prescribed level.

This overall picture suggests that there is an educational crisis in Malawi related to pupil literacy that needs to be addressed by a major educational intervention.

Policy Suggestion 6.1: The Ministry should establish a Reading Literacy Task Force to investigate why the reading skills of Standard 6 pupils in Malawi are so poor.

In order to provide useful feedback to teachers, the Ministry needs to identify the kinds of reading task where pupils had problems on the 59-item SACMEQ reading test. It is suggested that curriculum experts examine the item analysis statistics and sort the items into three broad groups: (a) those items where the pupils had 'no problems'; (b) those items that the pupils found 'partially difficult'; and (c) those items that the pupils found 'very difficult'.

A further analysis is required to provide clues as to which parts of the reading curriculum are being poorly addressed by the existing teaching instruction. Suggestions should be made about improved teaching materials and/or teaching practices for these problems.

Policy Suggestion 6.2: A Reading Literacy Task Force should commission a research study to examine the areas of the reading curriculum that were not mastered by Standard 6 and then suggest how the situation can be improved.

Analysis of mastery levels for sub-groups

In *Table 6.3*, the results for the minimum and desirable levels of mastery for certain sub-groups of pupils have been presented. The first sub-groups to be examined were boys and girls. Then socio-economic groups (based on the number of possessions in pupils' homes) were considered and, finally, sub-groups defined by school location.

A higher percentage of boys (24.3 percent) than girls (18.7 percent) reached the minimum level of mastery. The results clearly showed that there was a significant gender difference in reading at the minimum mastery level. However, it must be re-emphasized that both girls and boys performed very badly.

A list of 'possessions in the home', as described in *Chapter 3*, was used as a surrogate measure of the socio-economic circumstances of the homes from which the pupils came. Each pupil was given a score from 0 to 14 depending upon the number of possessions located in his or her home. A 'very low' socio-economic level was defined for those pupils coming from homes having 0-2 possessions; a 'low' level as 3 possessions; a 'moderately low' level as 4 possessions; a 'moderately high' level as 5 possessions; a 'high' level as 6-7 possessions; and a 'very high' level as 8-14 possessions. The final column of *Table 6.3* divided the total sample of 1,712 pupils into six groups ranging in size from 172 to 375.

There was only 14 percent of pupils in each of the two lower socio-economic groups who achieved the minimum mastery level in reading. The percentage of pupils in the very high socio-economic status group that reached the minimal level was more than twice as large as for pupils from the low group. Thus Malawi, like all other societies, has children from better-off homes performing much better than children from poorer homes – at least in terms of the defined minimum level of mastery in reading.

The third set of figures in *Table 6.3* showed that there were major differences in performance when pupils were classified according to whether the school was located in an isolated rural area, a rural area, a small town, or a city. Around four times as many pupils from schools located in cities reached the minimum level of mastery than pupils in schools located in isolated areas. However, the difference between pupils in rural and small towns was small. It should be noted that resources may well be unequally allocated among schools in isolated areas and cities and that it is important to examine these differences further at a later stage.

Table 6.3. Percentages of pupils reaching minimum and desirable mastery levels for sub-groups of pupils

	Minimum mastery level		Desirable mastery level		Sample size
	%	SE	%	SE	
Gender					
Boys	24.3	1.81	0.7	0.34	914
Girls	18.7	2.10	0.6	0.33	795
Socio-economic level					
Very low (0-2)	14.4	2.11	0.0	0.00	290
Low (3)	14.0	2.18	0.6	0.40	290
Moderately low (4)	25.7	2.35	0.5	0.33	375
Moderately high (5)	19.5	2.77	0.0	0.00	305
High (6-7)	27.3	3.61	0.8	0.64	280
Very high (8-14)	32.4	5.50	3.1	1.73	172
School location					
Isolated	11.2	6.64	0.0	0.00	87
Rural	19.7	1.59	0.2	0.13	1176
Small town	19.9	3.75	0.0	0.00	282
Large city	43.8	8.65	5.0	2.75	167
Malawi	**21.6**	**1.60**	**0.6**	**0.30**	**1712**

Conclusion

This chapter has presented a detailed analysis of the reading literacy levels of Standard 6 pupils in Malawi.

Two key points about the reading test used in this study to assess Standard 6 literacy levels need to be restated. First, the test was prepared in a scientific manner in order to ensure its validity for this purpose. Second, the 'minimum' and 'desirable' performance levels were specified by Malawi's reading specialists before the data were collected and analyzed.

On the 59-item test the median score was 20. In other words, 50 percent of the Standard 6 pupils scored more than 20 and 50 percent less than 20. Indeed, 20 percent of the pupils scored less than 15, a score they would have obtained just by guessing. Thus it can be said that 20 percent were unable to cope at all with the items presented on the test. Given that the test was an easy test, it could be said that 20 percent of the pupils were functionally illiterate by Standard 6 standards. Only 5 percent of the pupils scored more than 32. These are indeed shocking results.

It has been explained that Free Primary Education in Malawi has resulted in many more children entering school. However, it is questionable as to whether there were sufficient resources in the schools in terms of books and equipment, as well as for human resources in the form of qualified teachers. The above results in reading raise the question of the procedures to use in order to achieve 'Education for All'. It is, of course, a noble ideal to have all children undergoing basic education, and it is certainly an ideal to which all countries should strive. The problem is one of strategy. There is little point in putting many more children into school if they are not going to learn anything.

To be able to read is a prerequisite for learning in other subject areas. So what can we do? Would, for example, it not be wiser to take a step-by-step approach? First ensure that those in school reach a certain level of competency and then let in x percent more children. Then raise the level again so that all children in school reach the desired level and then let in a further x percent of children. And so on. This step by step approach would allow the Ministry to acquire the extra resources step by step and also to train the required number of teachers step by step. The answers to such questions are not always readily available from the results of research studies because they are, in part, political questions. Parents in all countries of the world want to make sure that their children go to school and very few, if any, of them would be willing to forgo this opportunity in order to assist with an improved quality of education for children from other families.

All of these results suggest that the time has come for a searching review of the general conditions in schools, the quality of the reading curriculum, and the quality of the teachers and their teaching methods. These major challenges will require the Ministry to work with donor agencies to identify appropriate solutions and to allocate sufficient resources to develop strategies for implementing those solutions.

Chapter 7

An Agenda for Action

Introduction

After the introduction of Free Primary Education in Malawi, the budget allocation to the education sector (which was at 21 percent in 1993/94) began to increase until, in 1997/98, it was 27 percent. The overall share of expenditure on primary education has also been increasing – from 49 percent in 1993/94 to 62 percent in 1997/98. The introduction of Free Primary Education increased enrolment in primary education by 30 percent over a five-year period.

The Ministry has worked hard over the past six years, and is still working very hard, to provide quality primary education in Malawi – but there are still many problems facing the Ministry. One of the major problems is the lack of school furniture and supplies. For example, the results presented in this report showed that only around one-third of Standard 6 pupils had their own reader/textbooks. A further problem is that most schools have no school library and most classrooms have no classroom library. Even the basic necessities for classrooms, such as usable chalkboards, are not 100 percent available and many of the teachers have not received adequate training. The general educational environment was also problematic with respect to the poor repair status of school buildings, overcrowded classrooms, and limited toilet provision.

The results emanating from this survey have been an eye opener in the sense that it was shown that most of the Ministry's benchmarks had not been followed for various aspects of school and classroom conditions. In addition, it was seen that a number of important resources were not equally distributed among schools within divisions.

In *Chapters 3* to *6*, various policy suggestions geared towards improving educational quality in Malawi were made. These policy suggestions were based on the high-quality data that were provided by the SACMEQ study for the nation as a whole.

It is hoped that these policy suggestions will assist Malawi's policy-makers to address some of the many challenges that face the primary education system. These challenges will need to be tackled by a team of partners – including the government, donors, and school communities.

Classification of policy suggestions

A total of 50 policy suggestions were presented in the previous chapters of this report. These were prepared after the SACMEQ data were analyzed and then subjected to careful interpretation. It was not appropriate to present these policy suggestions to the Ministry in the form of a simple list because it was not feasible to try to implement all suggestions at a single point in time. Instead, it was decided to undertake a classification of the suggestions according to their operational implications for the Ministry. It was considered that this form of classification would facilitate a more coherent debate concerning the prioritization of the suggestions and the subsequent selection of realistic avenues of action.

Grouping the suggestions

Five groups of policy suggestions were identified in the classification process. Each group was characterized by the nature of the logistical responses that were required of the Ministry.

Group 1: Consultations with staff, community and experts. The 10 policy suggestions (3.3 (a), 3.8 (a), 3.9, 3.10 (b), 3.19, 3.20, 3.23, 3.24 (a), 5.1(c), 6.1) contained in this group required the Ministry to hold consultations with staff in different sections of the Ministry, the Division offices, schools, the community, and all major stakeholders in education. For example: consultations with parents and teachers on improved participation rates; discussions with the Teaching Service Commission on income received by teachers for extra tuition; and information meetings with Primary Education Advisers to discuss homework policies for schools.

Group 2: Reviews of existing planning and policy procedures. This group contained 21 policy suggestions (3.2, 3.4 (b), 3.5, 3.6, 3.8 (b), 3.10 (a), 3.11, 3.12 (b), 3.15, 3.17, 3.18 (a), 3.18 (b), 3.21, 4.1, 4.2 (a), 4.2 (b), 4.3, 4.4 (b), 4.5 (b), 4.6 (b), 5.1 (b)) which identified a range of established planning and policy areas that need to be scrutinized and evaluated. For example: reviews of official policies on school entry age, grade repetition, and promotion rates; examinations of approaches to increasing student access to books; and reviews of policies related to the school health nutrition framework.

Group 3: Data collection for planning purposes. This group contained seven policy suggestions (3.12 (a), 3.14 (a), 3.16 (a), 3.22, 4.5 (a), 4.6 (a), 5.3) that required the Ministry to collect relevant data for planning purposes. For example: national audits of the incidence of untrained teachers and the provision of teaching materials; the construction of a database for classroom furniture; and a stock-taking examination of the professional training needs of teachers.

Group 4: Educational policy research projects. This group contained four policy suggestions (3.1, 3.4 (a), 3.7, 6.2) that covered the need for further research studies. For example: research studies on educational indicators; surveys to discover the reasons for low female participation rates; and a research Task Force to study student reading literacy performance.

Group 5: Investment in infrastructure and human resources. This group contained eight policy suggestions (3.3 (b), 3.13, 3.14 (b), 3.16 (b), 3.24 (b), 4.4 (a), 5.1 (a), 5.2) that called upon the Ministry to address issues of scarce human and material resources. For example: delivery of teacher in-service training programmes; establishment of a mobile library system; and improvements in the equitable distribution of human resources among schools.

Identifying important characteristics of each suggestion

In *Table 7.1*, the 50 policy suggestions have been grouped into the five categories described above. Each suggestion has also been linked to the relevant department within the Ministry that would be responsible for its implementation. In addition, broad estimates for implementation time and costs have been included for each suggestion. The headings used in the table have been explained below.

Relevant department: The name of the division, branch, unit, and special group within the Ministry that should be given responsibility for taking action with respect to each policy suggestion.

Time: A very approximate time estimate for implementing each policy suggestion was developed as a three-point scale: 'short' (around three to nine months), 'medium' (around one to two years), and 'long' (around three to five years).

Cost: A very approximate cost estimate was also made for implementing each policy suggestion according to the following three-point scale: 'low' cost – for initiatives that required no increased expenditure and could be accommodated within existing budgets through redeployment of staff, more efficient use of resources, and/or refining data-collection procedures that were already in place; 'moderate' cost – for activities that required substantial data collection and/or research projects that could not be built into existing arrangements and would therefore need to be funded in addition to current Ministry operations; and 'high' cost – for large-scale investments in capital works and human resources.

A four-stage Agenda for Action

All policy reports in the field of education need to recognize the economic realities of the countries in which they are prepared. This report is no exception. It would clearly be unrealistic to expect the Ministry of Education to make an immediate start on all 50 policy suggestions listed in *Table 7.1*. Even if full funding was available to move forward on all proposals, which it is not, the logistics of organizing and managing such a wide array of projects would not be possible in Malawi.

It was therefore important to make some attempt at creating a preliminary priority order for the policy suggestions so as to move towards a feasible schedule of implementation. Following broad consultations it was agreed that, in the first instance, it would be desirable for the Ministry to tackle the policy suggestions that had 'short' time-frames and 'low' costs. This approach was preferred in order to 'get the wheels turning' and thereby gain some momentum for addressing some of the more complex tasks associated with policy suggestions that required extended time-frames and were more expensive.

An examination of the final columns of *Table 7.1* showed four important patterns. First, for most of the suggestions, short time-frames were mostly linked to low costs, medium time-frames were linked to a range of costs from low to high, and long time-frames were linked to high costs. Second, the first two groups of suggestions involving 'consultations' and 'reviews' all featured short time-frames and low costs. Third, the third and fourth groups involving 'data collection' and 'research projects' had mostly medium-term time-frames and moderate costs. Fourth, the final group of suggestions concerning 'investment' had mostly long time-frames and mostly high costs.

With this information in mind, the following priority listing of the suggestions was prepared. The first stage lists the suggestions that should be addressed immediately by the Ministry. The second stage is recommended for action after the first stage is well under way. The third stage demands further information to be used as input before a reconsideration of priorities and the selection of a manageable subset of suggestions. The final stage suggests no action by the Ministry until suitable resource levels are in place.

Stage 1: For immediate action by the Ministry. The time-frame and cost patterns discussed above showed that the Ministry's first actions in response to the list of suggestions given in *Table 7.1* should be concentrated on those that were listed under Group 1 ('consultations') and Group 2 ('reviews'). All of these had short time-frames and required no major extra expenditures by the Ministry.

Stage 2: For second-phase action by the Ministry. Three suggestions in Group 3 ('data collection') had low costs. These were concerned with assembling information (related to untrained teachers, classroom furniture, teaching materials, and toilets) and could be considered suitable for a second stage of action after *Stage 1* has been completed.

Stage 3: For further review before action is taken by the Ministry. There were four suggestions in Group 3 ('data collection'), and four suggestions in Group 4 ('research projects') that had medium time-frames and moderate costs. After the completion of *Stage 2* activities this list of eight policy suggestions should be prioritized and perhaps two or three selected for more detailed planning. Work in this area could be facilitated by seeking advice from other countries and agencies that have tackled similar issues. A set of literature reviews could also be commissioned to check the present state of knowledge in relevant fields and to identify talented researchers in Malawi and elsewhere that might be called upon to work with Ministry counterparts on the more technical aspects of the projects.

Stage 4: For long-term action by the Ministry. Seven of the eight suggestions listed in Group 5 ('investments') were associated with high costs and therefore will need substantial external resource inputs. It will be difficult in the current economic climate for the Ministry to begin work on these suggestions unless some of the required resources can be obtained through a donor agency. These *Stage 4* suggestions should therefore be seen as a list that can be used in discussions with agencies such as the World Bank, United Nations Development Programme, non-governmental agencies, etc.

Response and proposed action of the Ministry on the Agenda of Action

The Agenda for Action presented in this chapter will require resources for proper implementation. These resources could either be obtained from within the Ministry or from other sources. The mobilization of resources will require close co-ordination to ensure that (i) decisions taken by the senior management of the Ministry concerning policy suggestions are implemented, and (ii) a mechanism is established to monitor and evaluate the progress and impact of the decisions. This is a joint effort that should be properly co-ordinated by the Planning Unit and associated progress reports should be passed on to the Permanent Secretary for Education at three-monthly intervals.

Table 7.1. Summary of policy suggestions in association with the relevant department(s), and the suggested time-frame/costs

Policy suggestion	Relevant department(s)	Time	Cost
Group 1: Consultations with staff, community and experts			
Policy Suggestion 3.3 (a) The Ministry should work with Parent Associations and Teachers Unions to design a social campaign which (on a continuing basis) should aim to sensitize parents to the importance of sending children (especially girls) to school.	Teachers Union, Parent Association	Short	Low
Policy Suggestion 3.8 (a) The Ministry should discuss, with stakeholders such as the Teachers Union and the Teaching Service Commission, issues related to the income that teachers receive for providing extra tuition and the possible conflicts of interest that can arise due to this practice.	Teachers Union, Teaching Service Commission	Short	Low
Policy Suggestion 3.9 The Primary Education Advisers should be required to ensure that homework is given to all pupils regularly, and also to request that teachers mark and work through it with the pupils.	Primary Education Advisers	Short	Low
Policy Suggestion 3.10 (b) The current levels of grade repetition in Malawi are much too high and school heads should be told to reduce these levels.	School heads	Short	Low
Policy Suggestion 3.19 The Ministry should arrange a meeting of the Primary Education Advisers in order to examine how they can improve their performance with respect to providing teachers with pedagogical guidance and information about professional development opportunities.	Primary Education Advisers	Short	Low
Policy Suggestion 3.20 The Ministry should initiate a dialogue with the Teaching Service Commission to discuss teachers' concerns in order to identify strategies for addressing these concerns.	Teaching Service Commission	Short	Low
Policy Suggestion 3.23 The Ministry should review the list of available school facilities with a view to developing a priority list for future spending within the Policy Investment Framework.	Planning Unit	Short	Low

Table 7.1. *(continued)*

Policy suggestion	Relevant department(s)	Time	Cost
Policy Suggestion 3.24 (a) The Ministry should explain to school heads that it is important for schools to have libraries – even on a small scale. School or classroom libraries should be accessible to all pupils and the borrowing of books should be encouraged.	School heads, Primary Education Advisers	Short	Low
Policy Suggestion 5.1 (c) The Ministry should ensure that school heads and other responsible authorities are informed regarding the Ministry's list of material resource inputs to schools and their associated benchmark levels.	School heads, Division Offices	Short	Low
Policy Suggestion 6.1 The Ministry should establish a Reading Literacy Task Force to investigate why the reading skills of Standard 6 pupils in Malawi are so poor.	Methods Advisory	Short	Low
Group 2: Reviews of existing planning and policy procedures			
Policy Suggestion 3.2 A review of current practices related to maximum entry age, repetition rates, and promotion rates should be carried out with a view to bringing forward policies that will decrease the age range in a standard and hence provide a more manageable educational environment in schools.	Planning Unit	Short	Low
Policy Suggestion 3.4 (b) The results of the study of girls' participation rates (*see Policy Suggestion 3.4 (a)*) should be used by the Ministry to develop a national policy for the education of girls.	Planning Unit	Short	Low
Policy Suggestion 3.5 The government should work with non-governmental organizations and the National Library Service to explore new low-cost approaches to increasing student access to books (for example, through the setting up of community reading centres and mobile libraries).	National Library Service, Donors, Agencies	Short	Low
Policy Suggestion 3.6 The Ministries of Education and Health should review and improve policies related to the school health nutrition framework so that they are able to conduct routine medical checks in schools in order to identify malnourished children.	Ministries of Health and Education	Short	Low

Table 7.1. *(continued)*

Policy suggestion	Relevant department(s)	Time	Cost
Policy Suggestion 3.8 (b) The Ministry should institute a set of national regulations to govern the provision of extra lessons and private tuition – especially where these are provided by teachers.	Teaching Service Commission	Short	Low
Policy Suggestion 3.10 (a) The Ministry should develop a policy to ensure that decisions about grade repetition are linked to valid measures of pupil performance.	Primary Education Advisers, School heads	Short	Low
Policy Suggestion 3.11 The Ministry should review existing arrangements for recruiting and posting teachers in order to improve teacher gender equity at the upper end of the primary school.	Division Offices	Short	Low
Policy Suggestion 3.12 (b) The Ministry should review its policy for providing in-service education programmes for untrained teachers so that a higher priority is given to schools in rural areas.	Methods Advisory	Short	Low
Policy Suggestion 3.15 Teacher Development Centres and Pay Centres should be used as collection points for teaching and learning materials for schools that cannot be reached by delivery vehicles.	Supplies Unit, Teacher Development Centres, Pay Centres	Short	Low
Policy Suggestion 3.17 The Methods Advisory Unit should ensure that teachers are acting in accordance with the Ministry's policy on the evaluation of pupil performance as this is an effective tool for checking the effectiveness of the teachers, and for ensuring that the curriculum is covered.	Methods Advisory	Short	Low
Policy Suggestion 3.18 (a) The Ministry should establish, publicize, and reinforce a national policy in all primary schools in order to (i) encourage parent-teacher interaction through 'open door' arrangements, and (ii) establish procedures to ensure that teachers know that they are required to meet with parents.	Planning Unit, Division Offices	Short	Low
Policy Suggestion 3.18 (b) The Ministry should require the establishment of a parent/teacher association in each primary school.	District Education Offices, School heads	Short	Low

Table 7.1. *(continued)*

Policy suggestion	Relevant department(s)	Time	Cost
Policy Suggestion 3.21 The Ministry should review and evaluate the impact and equity of the rehabilitation programme that has operated under the supervision of the Physical Facilities Unit.	Physical Facilities Unit	Short	Low
Policy Suggestion 4.1 The Ministry should review, and publish in one document, benchmark standards for the educational environment that are deemed to be 'reasonable for the proper functioning of primary schools'.	All Ministry Sections	Short	Low
Policy Suggestion 4.2 (a) The Ministry should address the issue of overcrowded classes through the redeployment of teachers in all divisions.	Staffing Unit, Physical Facilities Unit	Short	Low
Policy Suggestion 4.2 (b) The Ministry should (i) place an official ceiling on school enrolment, and (ii) permit the opening of satellite schools where these are considered appropriate.	Planning Unit, Physical Facilities Unit	Short	Low
Policy Suggestion 4.3 The Ministry should create an official standard for floor space per pupil in schools and classrooms, and then ensure that this standard is followed throughout the country by all stakeholders.	Planning Unit	Short	Low
Policy Suggestion 4.4 (b) The District Education Offices should give staffing priority to the most needy divisions and schools.	District Education Offices	Short	Low
Policy Suggestion 4.5 (b) The Ministry should draw up strategies in order to address the provision of adequate classroom furniture and supplies throughout the country.	Supplies Unit	Short	Low
Policy Suggestion 4.6 (b) A detailed analysis of professional training needs should be used to review policy concerning long-term plans for increasing the number of trained teachers through extensive in-service and on-service training programmes.	Methods Advisory	Short	Low
Policy Suggestion 5.1 (b) The Divisional Education Offices for Central West, South West, and Shire Highlands should examine inequities in the distribution of certain material resources among their schools and bring forward proposals to rectify the situation as soon as possible.	Division Offices	Short	Low

Table 7.1. *(continued)*

Policy suggestion	Relevant department(s)	Time	Cost
Group 3: Data collection for planning purposes			
Policy Suggestion 3.12 (a) The Ministry should assemble appropriate data to identify and assist schools with large numbers of untrained teachers.	Planning Unit	Medium	Low
Policy Suggestion 3.14 (a) A national audit concerning the availability of classroom furniture and teaching materials should be undertaken.	Planning Unit	Medium	Low
Policy Suggestion 3.16 (a) The Ministry, using divisional planners, should conduct an audit of the state of learning/teaching materials in the schools.	Division Offices	Medium	Moderate
Policy Suggestion 3.22 Schools not having the required number of toilets should be identified and then parent meetings should be held in these schools to discuss the use of community participation to rectify this problem.	Division Offices, District Offices	Medium	Low
Policy Suggestion 4.5 (a) The Ministry should develop a database for the life span, shortfalls, and stocks available for each item of classroom furniture, as well as noting disparities among divisions.	Physical Facilities Unit, Planning Unit	Medium	Moderate
Policy Suggestion 4.6 (a) The Ministry should undertake a detailed analysis of the professional training needs of teachers for *all* standards in primary schools.	Methods Advisory	Medium	Moderate
Policy Suggestion 5.3 The Divisional Offices should develop and maintain a database of human resources in each school in their jurisdiction with respect to staff academic and professional qualifications, and PEAs' visits.	Staffing Unit, Planning Unit	Medium	Moderate
Group 4: Educational policy research projects			
Policy Suggestion 3.1 The Ministry should plan to undertake a follow-up survey of the same target population employed during SACMEQ's initial project in order to examine changes in important educational indicators over time.	SACMEQ National Research Co-ordinator, Donors	Medium	Moderate

Table 7.1. *(continued)*

Policy suggestion	Relevant department(s)	Time	Cost
Policy Suggestion 3.4 (a) The Ministry should ask the Planning Unit to conduct a study to establish the main reasons for lower participation rates among girls.	Planning Unit	Medium	Moderate
Policy Suggestion 3.7 A household survey should be conducted to determine the main causes of absenteeism, and this information should be used to develop policies for decreasing and eradicating absenteeism.	Planning Unit	Medium	Moderate
Policy Suggestion 6.2 A Reading Literacy Task Force should commission a research study to examine the areas of the reading curriculum that were not mastered by Standard 6 and then suggest how the situation can be improved.	Methods Advisory	Medium	Moderate
Group 5: Investment in infrastructure and human resources			
Policy Suggestion 3.3 (b) The social campaign for school attendance (*see Policy Suggestion 3.3 (a)*) should be supported by a major community-based training initiative with an appropriate budget that covers at least five years.	Primary Education Advisers, Donors	Long	High
Policy Suggestion 3.13 The Ministry should work with a donor to provide resources to Teacher Development Units in order to establish a systematic programme of in-service training aimed at improving teaching skills – with priority given to untrained teachers.	Teacher Development Units, Donors	Long	High
Policy Suggestion 3.14 (b) The national audit of classroom furniture and teaching materials *(see Policy Suggestion 3.14(a))* should be used to guide the allocation of resources by donor agencies and community self-help groups.	Local government, Donors	Medium	High
Policy Suggestion 3.16 (b) The Ministry should seek partnerships with donors in order to strengthen resource capacity and to ensure equity and efficiency in the distribution of teaching and learning materials.	Finance Unit, Donors	Medium	High

Table 7.1. *(continued)*

Policy suggestion	Relevant department(s)	Time	Cost
Policy Suggestion 3.24 (b) The Ministry should work with appropriate donors to improve pupil access to books – for example by establishing a system of mobile libraries to which all pupils can have access.	National Library, Donors	Long	High
Policy Suggestion 4.4 (a) The District Education Offices should be provided with resources to recruit teachers in order to address the problem of the high pupil/ teacher ratio existing in many schools.	District Education Offices	Long	High
Policy Suggestion 5.1 (a) The Ministry should note the dearth of material resources described in *Chapters 3* and *4* and then hold serious negotiations with donors in order to establish long-term plans to overcome the deficit.	Physical Facilities Unit, Staffing Unit, Donors	Long	High
Policy Suggestion 5.2 The Divisional Managers of Education in North, Central East, South East, South West, and Shire Highlands should take action to ensure a more equitable distribution of human resources among schools. Since this is not an easy task, the Ministry should devise and try out measures to attract teachers and school heads to less popular areas.	Division Offices, Donors, Staffing Unit	Medium	Moderate

Conclusion

The analyses presented in this report indicate that there is clearly a major crisis in Malawi's primary education system. This crisis has been exacerbated in recent years by the rapid expansion in enrolments that occurred under the Free Primary Education programme.

Given these difficult circumstances, it was not surprising therefore to see that the pupils had very poor levels of reading literacy. In many schools a considerable number of the pupils could be considered to be functionally illiterate.

A large number of policy suggestions were generated from the above analyses. Many of these were 'Short Term/Low Cost' suggestions and they offer sound research-based advice on how to make beneficial changes that will have a positive impact at modest cost levels.

On the other hand, a number of policy suggestions impact upon the 'Long Term/High Cost' strategies that will be required to bring the Malawi primary school system up to a basic operational level in terms of educational environment factors that are fundamental for effective learning. Progress in this area will never take place unless a nationwide effort is made by the government and major donors.

The authors of this report sincerely hope that a beneficial large-scale programme of this kind can be mounted in Malawi as soon as possible under the guidance of a strong team of partners. They believe that such an undertaking will profit greatly if it employs this policy report to map out a systematic reform package that will revitalize Malawi's ailing primary education system.

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Inquiries about the Institute should be addressed to:
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